INSTRUCTIONS

FOR

Planting and *Managing*

HOPS,

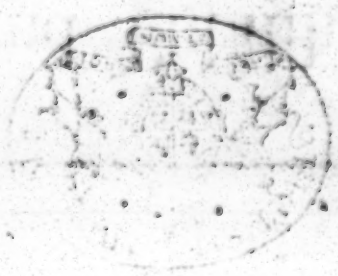
And for RAISING

HOP-POLES.

Drawn up and Publiſhed by Order of the *DUBLIN SOCIETY.*

DUBLIN:

Printed by A. RHAMES, Printer to the DUBLIN SOCIETY. M.DCC.XXXIII.



INSTRUCTIONS

FOR

Planting and *Managing*

HOPS, &c.

BY way of *Introduction* I ſhall give ſome Hiſtorical Account of the Progreſs which hath been made in the Planting of Hops, next ſhew the Advantages which may ariſe by ſuch Plantations, and then obviate ſome Objections which have been made, and which have hitherto diſcouraged the propagating of Hops among us.

Before the Uſe of Hops was diſcover'd, *Ale-Hoof*, *Worm-wood*, *Broom*, *Hore-Hound*, *Gentian*, and many other bitter Plants, were generally made uſe of for preſerving Malt-Liquors; but they either wanted Strength to make Liquors keep, or made

them very diſagreeable to the Taſte, or both; but when the Virtues of Hops were found out, that they gave Strength and Flavour to Malt-Liquors, and were able to make them keep for as long a Time as was deſir'd, and cou'd be rais'd in great Plenty, they ſoon came into general Uſe, and all the reſt were laid aſide.

Hop-Plants were firſt brought from *Flanders* into *England* in 1524. in the 15th Year of the Reign of *Henry* the Eighth; and were firſt propagated in *Kent*, *Eſſex*, and *Surrey*, but have ſince ſpread into the *South* and *Weſt* Parts of *England*, and of late Years into *Nottinghamſhire*; and ſuch large Improvements have been made, by the great Encreaſe of Hop-Plantations, eſpecially the laſt Sixty Years, that a few Counties only are able to ſupply *Great-Britain* and *Ireland*, and Foreign Countries alſo upon Occaſion, with Hops ſuperior in Goodneſs to any rais'd in foreign Parts.

Many great Eſtates and Fortunes have been made by this Plant in *England*, not only by the Hop-Planters, but by others who deal in Hops, and 'tis not to be doubted but the like might have been made in *Ireland*, if the ſame Care and Induſtry had been uſed in the Culture thereof.

Though conſiderable Improvements have been made of late Years in this Kingdom in ſeveral Branches of Husbandry, yet little or none hath been made in the raiſing of Hops; this Part of Huſbandry having been more neglected than any other, and yet it will appear, that no other wou'd turn ſo much to the Account of the Undertaker.

Several Gentlemen have from Time to Time made ſmall Plantations of Hops, and tho' they found them to agree well with their Soile, yet either for want of Poles, or of Skill, or due Care in the

the Management of them, or on Account of ſome other Diſcouragement, they for the moſt Part laid them aſide, or but faintly carry'd them on.

'Tis true, that while *Flemmiſh* Hops were imported into this Kingdom, they were generally ſold ſo cheap, that it was not worth any Man's While to raiſe them here; but ſince the paſſing *An Act* in *England* in 1711, which prohibited the Importation of Hops into *Ireland* from any Country, other than *Great-Britain*, the Caſe is very much alter'd in Favour of the Hop-Planter here, who has thereby a better Proſpect of getting a good Price for his Hops; for now that we have but one Market for purchaſing Hops, whenever the Seaſon is unfavourable for Hops in *England*, they are ſure to ſell at a very high Price, which lays us under great Diſtreſs, tho' perhaps at the ſame Time they are ſold cheap in other Countries.

We have many other Motives and Advantages in our Favour to encourage us to ſet about the planting of Hops; I ſhall only take notice of the following.

1ſt. The Soil in ſeveral Parts of this Kingdom, eſpecially in *Leinſter* and *Munſter*, is very fit and proper for Hops, and perhaps as good, if not better, than can be found in any other Hop-Country.

2d. Where Land is fit for Hops, it is at the ſame Time fit for raiſing Poles, of one kind or other.

3d. The Temperature of our Air is ſuch, that we are not ſubject to ſuch piercing *Eaſterly* Winds in the Spring, or to ſuch Droughts or Mildews in Summer, (which frequently ruin the Hop) as thoſe Countries are, which are on or near the Continent.

4th. Hop-Plantations give Employment to a great Number of poor People of all Ages and Conditions; Men, Women, and Children finding Work either

either in digging, dreſſing, hoeing, poleing, tying, or picking of Hops.

5th. The Labour of our People is cheap, and conſequently we may raiſe Hops with the leſs Expence.

6th. So many ſmall Hop-Yards have been already planted in ſeveral Parts of the Kingdom, that Sets or Roots may be eaſily procured.

7th. Hops Imported being ſubject to great Charges on Account of Commiſſion, Freight, Inſurance, Duties, and Damage by Sea, muſt come to Market here dearer, than Hops of our own Growth, which are not ſubject to any ſuch Charges, and are raiſed on or near the Place of their Conſumption, which muſt be a great Encouragement to all Hop-Planters here.

8th. So much Money will be ſaved to the Kingdom yearly, as the Value of the Hops we raiſe, will amount unto.

9th. We are often in ſuch Diſtreſs for want of Hops, that we are forc'd to take up with the worſt that can be got, which commonly ſpoil our Drink; ſometimes we pay near half as much for Hops, as we pay for Malt, and at other Times, they are ſo ſcarce, that they cannot be had at any Rate; whenever this happens, it cauſes a great Decreaſe in the Brewing of Malt-Liquors, and ſinks the *King's Revenue* conſiderably in the Article of *Exciſe*. But if we could raiſe ſuch a Quantity of Hops, as would be ſufficient to keep them always at a moderate Price, it would be a Means, not only of encreaſing the *Revenue*, by a greater Conſumption of Malt-Liquors, but of leſſening the Importation of Wines, and conſequently be an Encouragement to *Tillage*.

10th. Another great Encouragement, which the Hop-Planter has, is this, that he may be ſure of a Market for all the Hops he can raiſe, our Wants and Demands for them being conſtantly very great.

11th. But the greateſt Encouragement to the Hop-Planter, is the Profit he may reaſonably propoſe to make by his Hops. They reckon in *England*, that they have but a moderate Return, when the Produce of an *Engliſh* Acre of Hops ſells for no more than 30 Pounds, they frequently have 50, 60, 80, or 100 Pounds from an Acre, nay, ſome have got 200 Pounds from every Acre of their Hop-Ground, at a Time when other Hops generally fail'd, and theirs hit. Such extraordinary Profit, being very uncertain, is not to be depended on, but may be reckon'd to make amends for failing Years.

The whole Expence or Charge of an Acre is computed in *England* at 15 *l.* a Year, conſeqnently the clear Profit of an *Engliſh* Acre will be 15 *l. per Ann.* by the ſame Rule, as an *Iriſh* or *Plantation* Acre is in Proportion to an *Engliſh* Acre, nearly as 8 to 5, the Produce of an *Iriſh* Acre will be worth 48 *l.* the Charge 24 *l.* and the clear Profit 24 *l.* And though we ſhould ſuppoſe the Profit to be much leſs, than what is here repreſented, yet even then it will be ſufficient to ſhew, that neither our Land, nor our Induſtry, can be employ'd to ſo much Advantage in any Branch of Husbandry, as in Planting of Hops.

Ten Hundred Weight of Hops is reckoned in *England* to be a middling Crop for an Acre of good Land; an *Iriſh* Acre will in Proportion yield Sixteen Hundred Weight, or near Eight Bags. The middling Price of Hops in *England* is computed to be Three Pound the 100 Weight, and when thoſe Hops come to the *Iriſh* Market, we reckon Four Pound the 100 Weight to be the middling Price; at this

Rate

Rate the middling Value of an *Iriſh* Acre of Hops will be Sixty-four Pound, which ſurely is ſufficient Encouragement for any one to engage in this Improvement.

The Quantity of Hops, commonly conſumed in this Kingdom in a Year, being reckon'd to be about 6000 Bags, if an *Iriſh* Acre will produce 1600 Weight, or 8 Bags, then 750 Acres will yield as much Hops as we conſume yearly.

This ſhews how much it is in our Power, and how eaſy a Matter it is to relieve our Diſtreſſes and Wants in the Article of Hops. If only 75 Gentlemen would enter heartily into this Affair, and lay themſelves out to plant 10 Acres each, they would ſoon be able to ſupply our Wants, or make them much eaſier, with great Profit to themſelves, and Benefit to the *Publick*; not that it is imagin'd, that 750 Acres will be always ſufficient to ſupply our Occaſions; for ſome Years Hops almoſt totally fail, but it is judged that a 1000 or 1200 *Iriſh* Acres well managed would yield a Stock ſufficient to hold out, and ſerve us for the moſt Part both in ordinary and failing Years.

We muſt take Notice, that when we talk of the Profit or Quantity of Hops growing on an Acre, we ſuppoſe all along the Hop-Ground to be rich, and due Care taken both in the Culture of the Ground, and Management of the Hops, for if they ſhou'd be miſmanaged or neglected, or the Soil be poor, inſtead of yielding any Profit, they wou'd be a certain Loſs.

'Tis neceſſary here to give this farther Caution, that it is not proper for poor Farmers, or Men of ſmall Fortunes, to engage far in this Improvement, for it requires a conſiderable Stock at firſt to cultivate a large Plantation, to furniſh Poles, and do every other Requiſite; the Expences will be great,

and

and the Undertaker muſt expect to lye out of his Money for 2 or 3 Years, before he can have any Return of Profit, and even when his Hops come to their bearing State, and he is in Hopes of making good the Charges he has been at, he may be diſappointed by a bad Seaſon ; theſe are Risks and Expences, which a Man that has not a good Fund, ought not in Prudence to venture upon.

Not that it is hereby intended to diſcourage any one from planting ſmall Parcels of Hops ſuitable to his Abilities, for the pooreſt Farmer may eaſily ſpare Time and Labour to plant a few Hops in a Corner of his Garden, and Sallyes, Willows, or Aſh for Poles in his Hedges, which will yield him a conſiderable Profit, without laying out any Money for the ſame.

A large Plantation is an Undertaking fit for Gentlemen, who live upon their Eſtates, or for rich ſubſtantial Farmers ; where ſuch are willing to engage in it, and find upon Trial of a ſmall Plat of Ground, that their Land is fit for Hops, 'tis adviſed that they employ ſeveral Acres of their beſt Land this Way, make early Proviſion for Poles, by planting Coppices of Trees fit for that Purpoſe, and make this their chief Care and Buſineſs ; whereas if they content themſelves with a ſmall Hop-Yard, as it will not be worth their Attention, it will probably ſoon come to be neglected ; a Gentleman who ſhall lay out 10 Acres in Hop-Plantations, and employ skilful Hands, and ſpare no Coſt in the right Management thereof, may get as much Profit by thoſe 10 Acres, as by 500 Acres otherwiſe employed.

The Hops of Ten Acres, rightly manag'd, may very well be ſuppos'd to ſell for 500 *l.* and allowing even 200 *l.* for all Expences, there will remain 300 *l.* clear Profit, which is more than can be got by 500 Acres in the common Way of Husbandry.

'Tis common in *England* to ſee ten, twenty, or thirty Acres of Hops, or more, in the Hands of one Man, and ſome receive 2000 *l.* a Year for their Hops, notwithſtanding the high Price of Labour, Manure, and of every other Article relating to the Management of Hops. But then no Care, Induſtry or Expence is wanting to make their Plantations flouriſh.

Having thus mention'd ſeveral Motives to encourage us to raiſe Plantations of Hops, I ſhall now take Notice of ſuch Diſadvantages or Difficulties we may be ſuppos'd to labour under, and which may be objected as Diſcouragements againſt engaging in ſuch an Undertaking.

1ſt. It may be objected, that we want Shelter to defend Plantations of Hops in the Spring from Cold blaſting *Eaſterly* Winds, and in Autumn from ſtormy Winds from the *South* and *Weſt*.

To this it may be anſwer'd, that *Eaſterly* Winds are not ſo piercing here as in Places on or near the Continent, from whence thoſe Winds blow; becauſe they muſt paſs over two Seas before they come to us; and 'tis well known, that Sea-Breezes very much qualify cold froſty Winds, and alſo ſuch as are hot; and with regard to Shelter, 'tis to be preſum'd, that whoever ſhall make a Plantation of Hops, will at the ſame Time take Care, that beſides the Conveniency of Land-Shelter, which the Situation of the Ground may afford, his Plantation be alſo defended, on the *Eaſt*, *North*, and *Weſt*-Sides eſpecially, by large Hedges, and Rows of tall Trees, againſt violent and contagious Winds; ſuch Shelter may be rais'd at a ſmall Expence, and almoſt as ſoon as Hop-Plantations of any Extent ſhall be grown up large enough to require it.

2d. It may be ſtrongly urged, that without Poles it is impoſſible to raiſe Hops, that it is a vain Thing to plant Hops, ſince no Poles can be got, that we are at preſent quite deſtitute of them, and that it will take a great many Years, before we can raiſe a Stock of Poles ſufficient for our Occaſions.

It muſt be own'd, that there is no raiſing of Hops without Poles, and that at preſent there is no Quantity of Poles to be got at a reaſonable Price; this is one Inſtance of our bad Husbandry, no Care having been taken, either by copſing to preſerve the Growth of old Woods, or to make new Plantations of Trees fit for Poles: This Want of Poles is the chief Cauſe that has hindred Gentlemen from planting of Hops; but this Objection or Difficulty will ſoon be remov'd, when it ſhall appear, by the Method and Directions herein after mention'd for raiſing of Poles, that a ſufficient Quantity of them may at a ſmall Expence be rais'd in 4 or 5 Years Time, which will be almoſt as ſoon as a large Plantation of Hops can be grown up fit for poleing; ſo that if a Gentleman ſhall begin this Year to ſtock himſelf with Hop-Plants, and ſhall at the ſame Time plant Coppices of *Poplar*, *Abele*, *Alder*, *Sally*, or *Willow*, and alſo *Aſh* or *Cheſnut*, by the Time that his Stock of Hops ſhall be encreas'd, and the Increaſe grown up large enough to pole, the firſt Sort of Poles, of the *aquatick* Kind, will be alſo grown large enough for Uſe, and by the Time that firſt Set of Poles are worn out, the *Aſh* and *Cheſnut* will come in, and from thence forward conſtantly ſupply his Hop-Ground.

When Hops firſt began to be planted in *Nottinghamſhire*, by the Sides of the River *Trent*, which was about 20 Years ago, it was difficult to get Poles,

and none could be had for leſs than 30 Shillings the Hundred; and tho' Plantations of Hops are vaſtly encreaſed in that County, yet ſo great has been the Plantations for Poles, that they now ſell for 15 s. the Hundred, which ſhows that where Hops thrive and increaſe, Poles will not be wanting.

3d. It may be urg'd as a Diſcouragement to the Hop-Planter, that the Hop is a very tender Plant, and an uncertain Commodity to deal in, that it is very apt to ſuffer by Winds, Blights, Mildews, Rains, Droughts and Inſects, and when it wholly fails, the Loſs is intolerable, and if there be a general good Crop, the Price will be ſo low, that it will hardly anſwer the Charge.

It muſt be own'd that Hops often fail, by ſome one or other of the Cauſes before mention'd, yet we find by the Experience of *England*, that they are not diſcouraged by Accidents of theſe Kinds from keeping up aud enlarging their Plantations of Hops; though they fail in one Place, they may thrive in another; they may hit in higher Grounds when they fail in lower; and in failing Years, if your Quantity be ſmall, they are ſure to ſell at a high Price; it may be your good Fortune, that when other Hop-Grounds generally fail, yours may proſper, by having a better Soil, Shelter, or Expoſure, and if this ſhould happen, you may gain more by ſuch a Crop in one Year, than others may in three; and if we ſhould ſuppoſe a general Scarcity, which happens frequently in 3 or 4 Years Time, yet a Year of Scarcity is ſometimes a Benefit to the Planter, becauſe it will ſerve to conſume the Old Stock of Hops, and keep up the Price of new Hops for ſeveral Years following, which will make ſufficient Amends for failing Years; and you muſt obſerve,

that

that in Years, when Hops fail, you avoid a great Part of the Charge, which is that of picking and drying. And if Hops ſhuld be every where in Plenty, and their Price very low, if you can forbear ſelling, lay up your Hops, and you may in a failing Year, which often follows a plentiful one, be well paid for your Forbearance.

4th. It may be objected, that *Iriſh* Hops are not as good and as ſtrong as *Engliſh* Hops, that upon Trial they have been found to be much weaker, and therefore are leſs eſteem'd, and will not ſell where *Engliſh* Hops can be got.

In Anſwer to this, we are to obſerve, that the *Flemmings* made the ſame Objection againſt *Engliſh* Hops, when they were firſt planted in *England*, and yet we now find that *Engliſh* Hops far exceed the *Flemmiſh* in Goodneſs. It muſt be acknowledg'd, that few or no Hop-Yards have hitherto been manag'd in this Kingdom as they ought to have been, either an improper Soile has been choſen, or there has been no due Care taken in Cultivating and Manuring the Ground in the Beginning of every Seaſon, or in Hoeing and Weeding it after, or in drying the Hop, or there has been a Want of Poles or Shelter; a Neglect or Miſmanagement in one or other of thoſe Articles, has been the Occaſion that the Hops produced among us have been not only ſmall in Quantity, but poor and weak in their Kind: 'Tis common to ſee the Hills ſo near and crowded together, that there is not free Liberty for the Air, the Hills and Allys over-run with Weeds, and the Hop left to ſhift for it ſelf; and 'tis no Wonder that in ſuch Caſe the Hop ſhou'd degenerate; 'tis the ſame Thing with regard to any Garden Roots or Plants, if we do not give them the proper Soile,

Manure,

Manure, Weeding or Hoeing, they will dwindle away, and be worth nothing, but when they are right manag'd, as they are in *England*, they thrive and flowriſh with us as much as they do there; and 'tis not to be doubted, but that, if the ſame Pains were taken in the Management of Hops as are uſed in *England*, where they take as much Care of their Hop-Grounds as of their Gardens, they wou'd proſper as well in this Kingdom; and notwithſtanding we are far from ordering our Hops as we ought to do, yet we have the Pleaſure to find, that Hops rais'd this laſt Summer in ſeveral Parts of the Kingdom, have upon Trial anſwer'd as well as any imported from Abroad.

5th. It may be objected, that we have not Sun enough in this Kingdom for ripening Hops, and that our Summers are cold, wet and cloudy, and do not afford a ſufficient Warmth to bring them to Maturity.

It muſt be confeſs'd, that our Summers are ſometimes cold and wet, and when they are ſo with us, they are generally the ſame in other Countries, ſo that we fare no worſe than our Neighbours; and even in ſuch unfavourable Seaſons, if you have ſome Intervals of dry or ſunny Weather, you may have a tolerable Crop; and though your Quantity of Hops be ſmall, yet the high Price they ſell for at ſuch a Time, may make amends.

Hops do not require a very hot clear Sun, they often even ſuffer thereby, and thrive better in the Shade in dry Weather, than when expos'd full to the Sun; tho' the Summer be cold, yet if it be dry, the Hop will anſwer well.

We ſeldom want Sun or Warmth enough to ripen our Hops, eſpecially in the *Southern* Parts of the Kingdom; unleſs it be in ſuch Seaſons, when we have continual exceſſive Rains in *Summer* and *Autumn*, by which not only Hops, but all other Fruits and Grains are liable to ſuffer. But in order to avoid the Inconveniencies which ariſe from cold and exceſſive Rains and Winds, which ought chiefly to be guarded againſt, you ought to plant your Hops in a dry, mellow, warm Soil, lying open to the *South* or *Weſt*, and provide a warm Shelter of Hedges on the *Eaſt*, *North*, and *North-weſt* Sides, and tall Trees on the *Weſt* and *South-weſt*, which may break the Force of violent Winds, and yet not hinder the free Paſſage of Air, and take Care that your Hop-Hills be not too cloſe together, but that the Air may freely circulate about them, to dry up the Moiſture, and make the Hop-Vines perſpire the better.

Though Fen and Mould be apt to over-run your Hops in a wet Seaſon, yet Lice and Inſects, which infeſt the Hops, are deſtroyed thereby.

6th. It may be farther ſaid, that great Skill and Addreſs are required in the right ordering of Hops, that any Neglect or Miſmanagement may prove fatal, and that at preſent we want skilful Men, and muſt therefore run great Hazards in attempting the Culture of ſo nice a Plant.

To this it may be anſwer'd, that the Management of Hops is ſo well and ſo generally underſtood in all the Hop-Countries in *England*, that the common Farmers and even Lobourers, are Maſters of the Art; there is nothing in it but what may be eaſily underſtood and put in Practice, even by thoſe who are Strangers to it; we have many in the

Kingdom

Kingdom who have been long uſed to the Management of Hops, and where skilful Men are wanted, they may be eaſily procur'd. But that nothing may be wanting to engage and encourage Gentlemen to fall into ſo uſeful an Improvemet, we think it proper to give all the Rules and Directions, which ought to be obſerv'd in every Article relating to the Management of Hops, and which are found to be ſucceſsful in ſuch Places where Hops are beſt cultivated; with this View the following Inſtructions are drawn up and publiſh'd, which are taken from the Practice and Improvements now in Uſe in thoſe Countries, where Hops are in greateſt Reputation, and from ſuch Authors who have written beſt on this Subject, ſuch as *Scot*, *Markam*, *Woldridge*, *Houghton*, *Mortimer*, *Lawrence*, *Bradley*, *Miller*, and others; nothing being omitted which may be found uſeful or mrterial in any of them; ſo that if Gentlemen will take but due Care, they will not be at a loſs to know how to manage their Hops, the Inſtructions being full, and eaſy to be underſtood and put in Practice.

IN-

INSTRUCTIONS

FOR

Planting and *Managing*

HOPS.

CHAP. I.

Land fit for Hops.

A RICH, deep, mellow, dry Soil, more inclining to Sand than Clay, is in general the fitteſt for Hops, and in particular a black Garden-Mould is excellent.

The deeper the Soil the better for the Hop, becauſe the Hop ſtrikes its Tap-Root as deep as the Goodneſs of the Soil will invite, and thereby receives greater Nouriſhment.

Rich, deep, mellow Soils have the following Advantages, they produce ſtrong and vigorous Plants,

and a great Quantity of Hops; they need much leſs Manure to be brought to them, than what poor ſhallow Soils require; they are not apt to be over-ſoak'd in wet Weather, or over-parch'd in dry, and will bear Hops with Vigour for 40 or 50 Years, when ſhallow Soils will not hold out well above 10 Years without great Dunging: And 'tis frequently found, that an Acre of rich Ground will yield 20 *l.* more Profit in a Year, than an Acre of poor ſhallow Ground, though manur'd at a conſiderable Expence. Therefore chuſe the richeſt and beſt Meadow-Ground you have for Hops.

In *England* they indifferently uſe low or riſing Grounds for planting of Hops, being govern'd in the Choice by the Goodneſs and Depth of the Soil; for this Reaſon in *Eſſex* and many other Places they generally make uſe of low, flat, moory Grounds, or ſuch as lye on the Sides of Rivers, thoſe being their beſt and deepeſt Soils, but then they take Care to drain them well, and to make their Hop-hills high and large; but in *Kent*, *Surrey*, *Hampſhire*, and other Places, they commonly plant their Hops on riſing Grounds, which are their beſt Soils.

Both Situations have their reſpective Advantages and Diſadvantages, low Grounds have commonly a greater Depth of Soil, and produce a greater Quantity of Hops, and are not ſo ſubject to ſuffer by Droughts or ſtormy Winds, but then they ſuffer moſt by Rains in wet Seaſons, and by Mildews in dry. On the contrary, riſing Grounds have a greater Freedom of Air, and ſuffer leaſt by wet Weather or Mildews, but then they ſuffer moſt by Droughts in Summer, and Storms in Autumn: For this Reaſon it is adviſable for every one, who intends to make large Plantations of Hops, to plant both in low and upper Grounds, that when the Season proves unfavourable for Hops in one Situation, he

he may have a good Chance to have them eſcape, and thrive in the other.

A deep, mellow, hazely Mould, containing a due Proportion of Sand and Clay, agreeing beſt with Hops, if your Land be too light, you may mend it by laying thereon ſtrong clayey Mould, Marl or Lime; and if it be too ſtiff, you may correct it with Sand, Gravel, Aſhes, or light Mould; but freſh Mould, rotten Dung, and ſeveral Compoſts will ſerve both for ſtiff and light Grounds.

Having mention'd ſuch Lands as agree well with Hops, I ſhall now take notice of ſuch as are not fit for this Plant, and which ought to be avoided as ſuch. Stiff Clays, very wet and ſpewy Soils, and ſuch as are commonly ſubject to be over-flown in the Time of Floods, are altogether unfit for Hops; for they retain Water, which lying long at the Roots of the Plant, chills and rots them.

Likewiſe hard Gravels, ſtony Grounds, and ſuch as are for the moſt Part Sand, are very improper for Hops, as are alſo thoſe that are rocky and ſhallow, for there ought to be a Foot and a half Depth of Soil at leaſt to hold the Poles faſt and ſteady againſt the Wind.

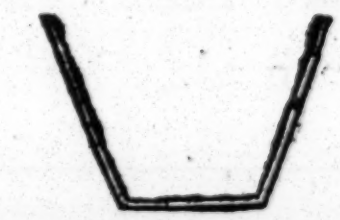
There is no certain Judgment to be made of the fitneſs of any Ground for Hops before Trial, therefore it is prudent, in every one who would engage in the planting of Hops, not to undertake a great deal at firſt; if he begins with a quarter, or half an Acre at moſt, it will be ſufficient for him to judge of the fitneſs of his Soil, and if it anſwers upon Trial, then he may with Safety and Courage go on to enlarge his Plantations.

CHAP. II.

The Situation of the Ground.

THE beſt Situation of a Hop-Ground is ſuch as inclines to, or lyes open to the *South*, ſo that it may have the Benefit of the Sun for the greateſt Part of the Day. Chuſe therefore, if you can, a Declivity to the *South*, but whatever be the Situation of the Ground which you make choice of, whether low or riſing, take Care that it be defended on the *Eaſt*, *North*, *Weſt*, and *South-weſt* Sides, by Hills or Trees lying at a ſmall Diſtance.

But let it lye open to the *South*, ſpreading out to the *South-eaſt* and *South-weſt* Points, in this Form, by which Means, the Sun will early in the Morning carry off the cold Dews from the young Sprouts in the Spring, and from the Bloſſoms in Summer, and continue longer on the Hops in the Evening.



Hops planted on the *South*-Side of a Hill will receive the full Warmth of the Sun, without overſhading one another. A Declination to the *Eaſt* or *Weſt* may do well alſo, but Hops growing on the *North*-Side, will be more expos'd to cold Winds, and over-ſhadow one another, and thereby looſe the neceſſary Warmth of the Sun.

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Though it has been obſerv'd, that Hops growing on the *North*-Side of a Hill have ſome Years proſper'd better than any other, which might have been occaſion'd either by their ſprouting out late in the Seaſon, and thereby avoiding the Danger of being blighted in the Spring by cold Winds, or by being leſs expos'd by their Situation to ſcorching Heats in Summer.

If it is in your Power, chuſe ſuch a Situation, where you may command a ſmall Stream of Water to be brought into your Hop-Ground in dry Weather, for at ſuch Times Hops being apt to fail in moſt Places for want of Rain, yours will be in a thriving Condition by the Means of ſuch a Stream, which may be diſtributed into all the Allys of your Hop-Grounds with Eaſe, by making ſmall Channels on the Deſcent of the Ground from one Side of the Plantation to the other, by which means the whole will be water'd at a ſmall Expence, and the extraordinary Price of Hops in ſuch a Seaſon will make ample amends for your Trouble.

Hops thrive beſt in an open Situation, where the Air may freely paſs round and between them, to dry up and diſſipate the Moiſture; and therefore 'tis recommended to thoſe, who are diſpos'd to make large Plantations of Hops, to lay out two or three Acres together, rather than to throw them into ſmall Plats or Diviſions, where they may be too much confin'd and over-ſhadow'd, and thereby want a free Air, and be more expos'd to Mildews or Honydews,

If you can, chuſe a Situation, where you may have the Shelter of Hills to the *Eaſt*, *Weſt* and *North* Sides; but whatever your Situation be, take Care to have a warm Shelter of tall Quickſet Hedges on the *Eaſt*, *North*, and *Weſt* Sides of your Plantation, to defend the young Sprouts from cold froſty Winds in the Spring, and the Hops, when grown

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up, from Storms in Summer and Autumn; and for greater Security it may be proper to plant two Quickſet Hedges on the *Eaſt*, *Weſt*, and *North* Sides, at 100 or 200 Feet Diſtance one from the other, and to plant the Interval between them thick with Trees fit for Poles, which will afford great Shelter to your Hops, and at the ſame time ſerve as a Nurſery for ſupplying your Hop-Ground with Poles, which being near at Hand, will prevent any Expence in Carriage.

But in regard that this Country is very ſubject to violent Storms from the *Weſt* and *South*, which frequently break and blow down the Hop-poles when they are loaded with the Vines and Hops, and thereby utterly ſpoil them; in order to guard the better againſt ſuch an Evil, it is alſo proper to provide a Shelter of ſeverel Rows of tall Trees on the *Weſt* and *South* Sides of your Plantation at ſome Diſtance from the ſame, which will ſerve to break the Force of thoſe Winds, and yet not hinder the free Paſſage of Air; for thoſe Winds are always beneficial, and do no hurt but when they are too violent, and they are better broke by tall Trees than by low cloſe Hedges. Such Trees may be *Aſh*, *Cheſnut*, or *Fir* on upper Grounds, and *Poplar* or *Abele* on lower.

It will be ſome Advantage to have your Plantation near your Houſe, for thereby you will ſave ſome Expence in the Carriage of Dung or Manure to your Hop-Ground, and by being ſo near and under your Eye, you will ſooner redreſs any Diſorder that may happen to your Poles or Hops.

The Hedges about the Hop-Ground ought to be made ſo ſtrong and ſo cloſe, as to prevent Hogs, or any Cattle or Fowl from getting in to ſpoil them.

CHAP. III.

How to prepare the Land for Planting.

HAVING pitch'd upon your Ground, the next Buſineſs is to prepare it for planting Hops therein; if you intend to begin with a ſmall Quantity of Land, as a quarter of an Acre, which is ſufficient for Experiment, let it be Lay-Ground, and digg it with the Spade in *October*, as deep as you can, taking Care to carry off all the Stones, and Roots of Weeds and Graſs, which after digging appear above Ground, and let it lye open thus the whole Winter to be the better mellowed.

In many Parts of *England*, when they break up Ground for Hops, the Plow goes firſt, and lays down the Swerd or graſſy Sod, and then Men follow with their Spades, and dig one Spit in the Furrow where the Plow had gone, and throw it on the Swerd, and ſo plow and dig till the Whole be done; and they compute that with one Plow and 16 Diggers they can plow and dig an Acre in one Day, by which means they raiſe about 12 Inches Depth of Earth, which will be a laſting Fund for nouriſhing the Hop-hills. But if you intend to lay out a greater Quantity of Land for Hops, and your Ground be ſower and abounds with Weeds and ſtrong Graſs, then plow the ſame in Spring as deep as you can, and give it a Summer's fallowing, in order to deſtroy the Roots of Weeds and Graſs, and burn them if you find them in great Quantity. Continue the

the ſame Tillage which is practis'd on Land deſign'd for Corn, or rather, which is more preferable, croſs-plow and harrow it well in Summer, and in the End of *July*, or Beginning of *Auguſt*, ſow it with *Turnep*-Seed, which being hoed twice, at the Diſtance of 8 Inches from one another, will make the Ground fine, deſtroy the Weeds, and make the *Turneps* large; and before *January* you may feed your Cattle with the *Turneps*, which will more than anſwer all Expences you have been at in preparing your Ground; and when the *Turneps* are off, give it another Plowing, which with the Winter mellowing will make it fit for planting Hops in the Spring; but if your Ground be rich, mellow, and dry, whether it be Lay or Fallow, begin to plow it up in *October* as deep as you can, and let it thus lye all the Winter to mellow by the Froſts, Rains and Snows, and in the Beginning of Spring, harrow it well and plow it again, and in *March* harrow it fine, and lay it as even as you can.

If the Mould of your Hop-Ground be naturally good, and be made fine by the former Preparation, there will be little or no Occaſion for any Manure to be brought to your Ground the firſt Year, but if the Soile is not rich or fine enough, then in Spring bring into your Hop-Ground ſome freſh Mould, or Mould mixt with old rotten Dung or other Manure, in ſuch Quantity, that there may be half a Buſhel for each Hill; if your Ground lyes low, and ſubject to Water, take Care to make Drains to carry off the Water, that it may lye dry.

CHAP. IV.

Of marking out the Ground for Hills, and the Diſtance of them.

WHEN your Ground is thus prepar'd by plowing or digging, and made level and fine by the Harrow in the Spring, then on a ſtreight Side of the Field, at 15 or 20 Feet Diſtance from the Hedge, ſtretch a Line parallel to the Hedge, with Knots or Rags tied in it at ſuch Diſtances as you deſign your Hills, and ſtick in the Ground a ſharp pointed Stick at every Knot, as Marks where the Hills are to be; continue the Line in the ſame manner the whole Length of your Ground, and from this firſt Row you may mark out the reſt of the Ground, either in Squares Chequer-wiſe thus

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by making parallel Lines at the Diſtance the Hills are to be, or in the Quincunx Form thus,

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where the Hills of every ſecond Row lye oppoſite to the Middle of the firſt, in a Triangular Form

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If you will plant after the laſt Form, you may with great Exactneſs mark out the Hills with the help of a Triangle, made of three ſtraight Rods or Sticks, each being ſix, ſeven, or eight Feet long, according to the Diſtance of the Hills, for two of the

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Angles or Points being applied ſucceſſively to two of the Hills already mark'd out in the firſt Row, the other Angle of the Triangle will point out exactly the Places where the other Rows or Hills are to be, and thus you may mark out the whole Ground.

If the Ground you deſign to plant be large, and ſuch as requires the Hills to be 8 Feet diſtant from one another, and if it lye ſo that you can conveniently plow it, then it is beſt to mark out your Hills in Squares, according to the firſt Form, becauſe when the Hills are ſo plac'd, and at a due Diſtance, you may with the Hoe-plow, at any Time either in Winter or Summer, plow the Interval between the Hills, to deſtroy the Weeds and raiſe your Hills, which will ſave a great deal of Labour in digging and hoeing. But if your Ground be ſmall, and ſuch as requires the Hills to be at no greater Diſtance than 6 or 7 Feet from one another, or that you deſign to turn it with the Spade or Breaſt-plow, then plant in the Quincunx Form, which is more beautiful to the Eye, and better for receiving the Sun and Air. But which Way ſoever you chuſe, pitch a ſmall Stick at every Place where there is to be a little Hill, and if your Ground be not rich enough, bring into it the beſt Mould you can get, and at every Stick dig a Hole about a Foot ſquare, and fill it with the Mould to ſet your Plants in.

The Diſtance of the Hills ſhou'd be according to the Nature and Goodneſs of your Soil; if your Soil be dry, hot, and ſhallow, then about ſix or ſeven Feet will be a convenient Diſtance, but if your Soil be deep, rich, moiſt, and ſubject to bear large Hops and Leaves, then eight or nine Feet is the proper Diſtance. But in old Ground, if your Hills are too far aſunder, that Inconveniency may in ſome meaſure be remedy'd by enlarging the Hills, and increaſing the Number of Roots and Poles in each Hill;

Hill; and if your Hills be too near, then leſſen the Roots and Number of your Poles; for over-poling of Ground either in Number or Heighth, injures more than under-poling.

CHAP. V.

The Seaſon for Planting.

THE Seaſon for planting of Hops is from the latter End of *February* to the 10th of *April* at fartheſt, at the Time, when the Hop begins to ſprout, which in dry light Grounds, and forward Seaſons, will be about the latter End of *February*, but in moiſt heavy Grounds, and backward Seaſons, not till the latter End of *March*; this Time is uſually choſen for planting Hop-ſets, not only to avoid the Danger of Froſt and Rain in Winter, but becauſe this is the proper Seaſon for pruning and dreſſing the Hop; and it is at this Dreſſing that Sets or Roots are cut off for planting; not but that *October* is alſo a good Seaſon, if you plant in a dry mellow Soil, but then Sets are not to be had, unleſs from a Ground that is dug up and deſtroy'd, or from Hills that are ſuffer'd to be dreſs'd out of their proper Seaſon.

CHAP. VI.

The Choice of Sets or Roots for Planting.

THERE are ſeveral Kinds of Hops, thoſe moſt in Eſteem are the long white Hop, the Oval, and the long ſquare Garlick-Hop, which differ from one another in the Colour, and Shape of the Bells or Hops, in their Degree of bearing and Time of ripening. The long white Hop is moſt eſteem'd, as being the moſt beautiful, and a great Bearer, the Beauty of Hops conſiſting in their pale bright green Colour. The Oval Hop is beautiful, but does not produce ſo great a Quantity. There is a Sort of this Kind of white Hop, call'd the Early or Rath Hop, which is ripe a Week or ten Days before the common, but 'tis more tender, and bears a thin Crop, the only Advantage it has is, that it comes firſt to Market. The long and ſquare Garlick Hop is the greateſt Bearer, more hardy, and ſomething later ripe than the former, but by reaſon of the redneſs towards the Stalk, is not ſo beautiful to the Eye, and therefore not ſo much eſteem'd as the other Sorts.

There is a ſort of Hop, to be found in moſt Hop-Grounds, call'd the Female Hop, and by ſome the Wild Hop, which puts out a great Number of Branches of ſmall Flowers about the Beginning of *July*, not in any reſpect like the true Hop; but in the latter End of *July*, juſt before the true Hop begins to flower, they are ripe, and then with the leaſt Motion of Wind they ſhed a Cloud of Duſt or *Farina*, which diſperſes it ſelf quite round about, and poſſibly

poſſibly may be of Uſe to impregnate other Hops, and therefore ſome adviſe to leave one or two Hills of them ſtanding in the Hop-Ground, till farther Trial be made whether they are of any or what Uſe. But the common Practice is to mark them at their firſt Appearance, and to root them out afterwards, becauſe they bear no Bells or Hops, and being commonly the ſtrongeſt Plants, without Care in marking them, Sets may by Miſtake be taken from them.

There is a poor ſtarv'd Hop, call'd the Wild Hop, but this is not thought to be a diſtinct Sort, but a Hop which has degenerated for want of Culture.

The ſeveral Kinds and Goodneſs of Hops may be known alſo by the Colour of the Vines, Binds or Stalks, the whitiſh Binds produce the White Hops, both the Long and the Oval; the Grey or Greeniſh Binds commonly yield the large Square Hop, but Red Binds produce the Brown Hop, which is leaſt of all eſteem'd.

You ought to be very curious in theChoice of your Plants or Sets, as to the Kind of Hop, for it is a great Trouble and Loſs to the Planter, when his Garden proves a Mixture of ſeveral Sorts of Hops, ripening at different Times; he that plants the three Sorts of Hops aforemention'd, *viz.* the Early, the Long White, and Square Hop, in three diſtinct Parts of his Ground, will have the Conveniency of picking them ſucceſſively as they become ripe.

Hop-Sets are Cuttings from the Roots or Branches which grow from the main Root or Stock.

Procure Sets, if poſſible, out of Ground which is entirely of the ſame Sort you wou'd propagate, let them be 6, 7, or 8 Inches long, with 3 or more Joints or Buds on them, all the old Bind and hollow Part of the Set being cut off.

If there is a Sort of Hop you value, and would increaſe Plants or Sets from, you may lay down the ſuperfluous Binds when you tye the Hops, cutting off the Tops and burying them in the Hill; or when you dreſs the Hops, you may ſave all the Cuttings, and lay them in Rows in a Bed of good Earth, for almoſt every Part will grow, and become a good Set the next Spring.

Some have try'd to raiſe Hops by ſowing the Hop-Seeed, but that turns to no Account, becauſe that Way is not only tedious, but the Hops ſo produced are of different Kinds, and many of them wild and barren.

Chuſe the largeſt Sets you can get, the beſt are to be had out of Gardens, which have been well kept, and where they have been rais'd very high the precedent Year, which encreaſeth the Plants, both in Number and Bigneſs. Take Care that your Sets be all of the laſt Year's Growth, which are always white, and ſo are eaſily known.

CHAP. VII.

The Manner of Planting.

THE Ground being made level and mark'd out for Hills, then in the latter End of *February*, if your Ground be light, or late in *March*, if the Ground be ſtrong and moiſt, in the Places where you laid your Sticks, make Holes about a Foot or 16 Inches over, but the Depth of them muſt be according to the Nature of the

the Ground, 10 or 12 Inches Depth in general is ſufficient, but if the Ground be ſhallow, and that you meet with hard Clay or Gravel, by no means enter into it, for then you make a Baſon to retain Water, but in ſuch Caſe, inſtead of going deeper, raiſe up a ſmall Hill of good Mould; but if there is a good Depth of rich mellow Mould, then dig the Hole a Foot and half, or two Feet deep, and you will find the Hops will thrive the better, for the Tap-Roots naturally run downwards.

If Sets can be had from a Hop-Ground at a ſmall Diſtance, bring no more Sets at a Time than you have Holes ready made for them, and plant them as ſoon as poſſible, taking Care by keeping the Roots in wet Litter to prevent their growing dry; but if you procure Sets at a great Diſtance, as ſoon as they are cut, lay them up in dry Sand or Earth, or pack them in ſuch a manner that no Air may get to them before they are planted, and when you have brought them home, bury them in Ground, and plant them as ſoon as the Weather will permit.

When all Things are ready for planting, fill up the Holes with the Mould you threw out, if the ſame be naturally good, having firſt broke it fine with a Spade, but if the ſame be not rich enough, then make uſe of fine freſh Mould or Compoſt provided for that Purpoſe, about a Peck or two to a Hill, but by no means put any Dung into it.

Then with a Dibble or Setting-ſtick, ſuch as Gardiners plant Beans with, make five or ſix Holes the Depth of your Sets, one in the Middle perpendicular, and the reſt round about ſlopeing, and meeting at the Top near the Center; put your Sets therein, and let them ſtand even with the Surface; preſs the Mould cloſe to them, and cover them with fine Mould 2 or 3 Inches thick.

Some place all the Sets in the Middle of the Hole before they fill it, ſpreading the lower Parts of them towards the Sides, and laying the Tops even with the Surface, then holding them hard with one Hand, with the other they throw in the Mould, and preſs it round about them; either Way may do, but the firſt is moſt in Uſe.

You muſt be careful to ſet the Ends of every Set upwards which grew ſo before, which you may know by the manner the Buds lye, and let no part of the dead Stalk remain on the upper Joint.

If the Sets have begun to ſhoot before you have Time to plant them, by no means cover the young Buds with Mould, for that would deſtroy them.

CHAP. VIII.

Dreſſing of Hop-Ground the Summer after Planting.

THE Ground being firſt planted, all that is to be done the Summer following is to keep the Hills and Alleys clear from Weeds by frequent Hoeings, to dig the Ground in the Month of *May*, and carry off all the Stones which are turn'd up by digging, afterwards to raiſe a ſmall Hill round about the Plants, and to throw ſome fine Mould on the Roots, and in the latter End of *May*, or Beginning of *June*, to twiſt all the Vines or Branches together into a Bunch or looſe Knot, and to lay them thus twiſted on the Top of the Hill. Some chuſe to put one or two Sticks of 3 or 4 Feet

Feet long to each Hill for the Vines to twiſt about, as more agreeable to the Hop, eſpecially if the Vines be vigorous; but Care muſt be taken to prevent the Hop from bearing the firſt Year, for that wou'd weaken the Plant.

Some adviſe to ſet two Rows of Beans between the Hills, as well to yield ſome Profit the firſt Year, as to ſhelter the young Buds from the Heat of the Sun.

CHAP. IX.

Dreſſing of Hop-Ground the Winter after Planting.

THE Hopground being kept clear from Weeds in Summer, the *Michaelmaſs* following lay on the Alleys, between the Hills, rotten Dung, or Dung mixt with Earth, or other Manure, which every Hop-planter is ſuppos'd to provide for every Winters Dreſſing, about 60 or 80 Carr Load to an Acre, more or leſs according to the Goodneſs of the Land; and in *November* or *December* following dig or plow it in, that it may the better incorporate with the Soil; or you may prepare your Manure or Compoſt in ſome other convenient Place, to be brought to your Hop-Ground in the Spring, but do not omit in the mean Time to plow or dig your Hop-Ground ſome Time in the Winter. Some give their young Hops a ſmall Dreſſing in *October* after they are planted, and in doing ſo, they

carefully open the Hills in dry Weather, and cut the Binds a little lower than the Surface of the Earth, and cover the Tops of the Plants with fine Mould 2 or 3 Inches thick, and lay thereon a ſmall Coat of Earth from the Alleys, which will defend them from the Froſts in Winter, and be of Uſe at the next Dreſſing in Spring; but this Dreſſing in *October* ſhould not be practiced but in the firſt Year after planting.

CHAP. X.

The manner of dreſſing and pruning of Hops in the Spring.

THE latter End of *February* in the ſecond Year, when the Weather is fair, open the Hills, and with a ſharp Knife cut off the Shoots of the firſt Year to within an Inch of the old Stock, together with all the young Suckers that have ſprung from the Sets, and cover the Stock with fine Earth. To keep the Knife ſharp you ſhould have a Whetſtone always by you at Dreſſing.

But in the third and following Years, when you dig your Hop-Ground in *February*, let the Earth be taken away with a Spade or Hoe round about the Hills very near them, that you may more conveniently come at the Stock to cut it; then in fair Weather, towards the Beginning of *March*, if your Hops be weak, begin to dreſs them, but if your Hops be ſtrong and in Heart, the middle or latter

End

End of *March* will be the beſt Time, for late Dreſſing reſtrains their too early ſpringing, which is the Cauſe of many Injuries to the Hop; the Manner of Dreſſing is this: Having with an Iron Picker clear'd away all the Earth out of the Hills, ſo as to make the Stock bare to the principal Roots, with a ſharp Knife cut away all the Shoots which grew up with Binds the laſt Year, and alſo all the young Suckers, that none be left to run in the Alleys, and weaken the Hill; cut them as cloſe as you can to the old Root; but to a weak Hop ſome part of the new Shoot may be left at Dreſſing; by no means cut the Tap-Roots that run downward, the Roots that run outward from the Sides of the Plant, are only to be cut, becauſe they will elſe incumber the Ground; the old Roots are red, and the young white, and ſo are eaſily diſtinguiſhed; be careful not to hurt the old Roots, but cut away all the new, and lay by ſuch of them as you intend to make new Sets of to plant out; if there are any wild or female Hops, take up the whole Hill, and new plant it.

When the Hop has been long planted, it is adviſ'd to cut one part of the Stock lower than the other, and the following Year to cut that part low, which before you left higheſt, which will make them ſpring with more Vigour.

When you have thus pruned the Roots, apply ſome rich Mould or Manure to them, and make not the Hills too high at firſt, leaſt you hinder the Growth of the young Shoots; and though the Hops are ſpringing out of the Hill, before you begin to dreſs them, yet you need not fear to cut off the Roots.

Keep all Poultry, eſpecially Geeſe, out of your Hop-Garden in the Spring, becauſe they are apt to devour the young Sprouts.

If your Hops are old or worn out of Heart, then in the Beginning of Winter, or at fartheſt in *January* or *February*, if the Weather be open, dig about them, and take away as much of the old barren Earth as you can, and apply good fat Mould or Compoſt to their Roots, ſuch Winter-Dreſſing will recover your Hops, and deſtroy the Weeds.

CHAP. XI.

Poling of Hops.

WHEN you have dreſs'd your Hops, the next thing to be done is to pole them: In the firſt Year of planting, Poles are not requir'd, you need only twiſt the Binds together into a Knot on the Top of the Hill about the End of *May*, and let them lye ſo all the Seaſon, but ſome think it better to give them ſhort Poles or Sticks of 3 or 4 Feet long.

The ſecond Year provide Poles of 10 or 12 Feet long, and no more, but the third Year Hops come to their full bearing State, and then require Poles of full Size; if the Ground be rich, and the Hop vigorous, provide large Poles, from 16 to 24 Feet or longer, or elſe you will loſe the beſt part of the Profit for want of Poles.

If the Hop be weak, and the Ground not rich, provide Poles from 14 to 18 Feet long, and not longer, leaſt you impoveriſh the Root, for the Hop will ſoon run it ſelf out of Heart if over-pol'd, and there is more Danger in over-poling than in under-poling;

poling; nor can you expect a Crop from an over-pol'd Ground, for the Branches which bear the Hops, grow very little till the Binds have over-reach'd the Poles, which, when the Pole is too long, they cannot do. Two ſmall Poles are ſufficient for a young Ground.

Three Poles to a Hill is the Number generally made uſe of; if the Hills are large, and diſtant from one another, put four Poles to them; if the Hills are ſmall and near, two may do: In dry hungry Ground the Poles may ſtand nearer than in rich mellow Ground, where the Hops are ſubject to grow large and hawmy.

Before you begin to pole, diſperſe your Poles among the Hills, three to a Hill, taking Care to put the larger Poles to ſuch Hills where the Hops appear moſt vigorous; and begin not to pole, till the young Sprouts appear 8 or 12 Inches above Ground, which will be about the Middle of *April*, or fourteen Days after Dreſſing in rich Land; at which Time you may diſcern where the biggeſt Poles are requir'd, and continue poling till the Sprouts are 2 Feet or more in Height; but ſtay not too long, leaſt you prejudice the Hop, which will not grow well unleſs it has a Pole or ſomething elſe to climb upon; and if the Binds are ſuffer'd to grow ſo long as to fall into the Alleys, they will be apt to entangle with one another, and not ſo readily take to the Pole after.

For the better fixing the Poles in the Hills, make Holes in the Ground with an Iron ſquare Crow, which ends in a ſharp Point with 3 or 4 Sides, of the ſame Shape as the But-ends of your Poles are to be, or make uſe of a long wooden Dibble fac'd in like manner at the Point with Iron. This Inſtrument ſhould be about 3 Feet long, and not altogether ſo large as the Poles, that the Poles may take

the

the better hold; the Top of the Inſtrument ſhould be like that of a Spade, furniſh'd either with an Eye Handle, or a Crutch, that the Workman may the better force it into the Ground.

There is no certain Depth to fix the Poles in the Ground at, this varies according to the Height of the Pole, the Stiffneſs of the Ground, and Expoſure to the Wind; high Poles, a looſe Soil, and a great Expoſure, require them to be put deeper, but this Rule ſhou'd be obſerv'd, that the Pole be faſtned ſo deep and ſo well that it ſhall rather break than riſe; the uſual Depth is about a Foot and a half.

Make the Holes about a Foot from the Center of the Hill, or 3 Inches from the main Root, taking ſpecial Care not to hurt the Root of the Hop, or any of the young Sprouts; make 3 Holes in each Hill, one to the *Eaſt*, another to the *North*, and a third to the *Weſt*-ſide of it, that all the Hops may better receive the *South*-Sun; when you have made the Holes, then force the Poles into them, driving them down with a quick Motion, and place them as perpendicular as you can, or rather leaning a little outward one from another, with all their bending Tops turn'd outward from the Hill, to prevent the entangling of the Vines; a leaning Pole commonly bears moſt Hops, but it is more apt to be blown down, than an upright one.

When you have erected your Poles, then ram the Earth on the outſide of the Poles with a Rammer, for its greater Security againſt the Wind; but by no means ram within-ſide the Poles, for fear of bruiſing the Shoots; this Rammer may be made of a piece of Wood of about four Foot long, and three Inches thick at Bottom.

Have always ſome ſpare Poles in reſerve to ſupport the Vines, in caſe any Poles break or be over-

bur-

burthen'd, for if they are ſuffer'd to lye on the Ground, they ſoon periſh.

If after ſome Time of growing you find a Hop underpol'd, you may place a taller Pole near it, and bring the Hop from one Pole to another.

It is adviſable to place the ſtrongeſt and largeſt Poles you have in the 3 or 4 outermoſt Rows of your Plantation, eſpecially on the *Weſt* and *South-weſt* Sides; they will ſtand better againſt ſtormy Winds, and protect the Inſide of the Plantation from their Violence.

In dreſſing and forming the Poles, cut about a Foot or more of the But-end with 3 Sides ſloping to a Point, this ſquare cutting better prevents their ſhaking in the Ground. Poles of *Alder*, *Birch*, *Poplar*, *Abele*, or *Sally*, are eaſieſt and ſooneſt rais'd, and do well in low Hop-Grounds, but then they are brittle, apt to break, and ſoon rot, and at beſt laſt not above four Years.

The bark of *Alder* and *Birch* is thought to help the climbing of the Hop, but being apt to crack, it ſoon receives and ſoaks the Wet, and rots the Pole, for this Reaſon, ſome that uſe them, are at the Trouble to ſtrip off the Bark.

But the Poles generally approv'd and made uſe of in *England*, are thoſe of *Aſh*, which are tough and ſtrong, and laſt 6 or 7 Years. Poles of *Willow* are alſo in Eſteem, and thoſe of *Cheſnut* are moſt durable.

CHAP. XII.

Tying of Hops:

WHEN the Poles are ſet as above directed, and the Vines are grown two or three Feet high, ſuch of them which have not taken to Poles of themſelves, ſhou'd be guided by the Hand to ſuch Poles as are neareſt, and have feweſt Hops, the ſtrongeſt Vines always to the talleſt Poles, two ſtrong, or three weak Binds being ſufficient for a Pole; wind them about the Poles at an equal Diſtance, according to the Courſe of the Sun, which they always follow, and bind them with wither'd Ruſhes or woolen Yarn, but not ſo cloſe as to hinder their climbing up the Pole, for if you bind them hard, they will wither; two or three Strings or Bindings to each Pole is ſufficient; thus continue to do till all the Poles are furniſh'd with Vines; be cautious of breaking the tender Shoots, which are more tender and brittle in the Morning than in the Heat of the Day, and for this Reaſon employ Women to tye your Hops; and when they have begun to take to and twine round the Poles, then cut off all the other weak Vines cloſe to the Hill; it being ſuppos'd that you have preſerv'd the ſtrongeſt Vines for the Poles.

During the Months of *April* and *May*, Hops ſhou'd be conſtantly tended, to guide them to their Poles, and if the Vines are not able to ſupport and keep themſelves to the Pole, give them a ſecond tying as high

high as you can reach, and when the Vines are grown beyond the reach of your Hand, if they forſake the poles, a fork'd Stick, or a Ladder with a Stay to the Back, will be uſeful to tye them up again; if the Vines be ſtrong, and much over-grow the Pole, ſome adviſe to ſtrike off their Heads with a long Switch to encreaſe their branching below.

About Midſummer, or a little after, the Hops leave off running up at length, and begin to branch, ſuch as do not, it may be convenient to ſtrike off the Top with a Switch, or divert it from the Pole, that it may branch the better, which is much more for the Benefit of the Hop, than its running it ſelf out at length.

Some ſay, that if the Top or Bud of a Vine happens to break off, it will run no farther, but a new Shoot will ſpring from the next Knot, and if carefully manag'd, will take to the Pole, and run to the Head and bear Hops.

CHAP. XIII.

Summer-dreſſing and Hilling.

HAVING dreſs'd, pol'd, and tyed your Hops, as above mention'd, then ſometime in *May*, eſpecially after Rain, give the Ground the Summer digging, or at leaſt pare off the Surface of the Earth with a Spade, Hoe, or Breaſt-plow, and with a Shovel throw ſome of the fine Earth on the Hills, and enlarge their Breadth, cutting away and burying all ſuper-

fluous Roots of Hops, and Weeds you find on the Hills or Allyes, by which means you will hinder the Weeds from impoveriſhing your Hops, and keep your Hills moiſt; by no means make up and finiſh your Hills all at once, but by Degrees and at different Times; you are ſuppos'd and expected to hoe from Time to Time the Weeds which grow on the Hills and in the Allyes, and at ſuch Times of hoeing, which may be two or three times in the Summer, throw up conſtantly ſome of the Parings and fine Earth on the Hills, eſpecially after Rain, which will better nouriſh the Roots, and keep the Hills looſe, open and moiſt: Though it be a general Rule, whenever you weed the Hills, or hoe or pare the Allyes, to caſt ſome fine Mould on the Hills, yet this admits of an Exception; for when you find the Vines very vigorous and full of Sap, you muſt forbear giving them any more Earth, for Exceſs of Nouriſhment will make them run too much to Stalk, and hinder their branching and running into Bells and Hops; you may at any Time add to the Sap by enriching the Hills, but cannot withdraw it at pleaſure,

The fewer Weeds you have in your Ground, the more Hops you will have on your Poles; therefore ſuffer no Weed to ſeed on the Hop-Ground.

The common Size for Hills, when they are fully compleated, is ſomewhat more than 2 Feet broad, and about a Foot and a half high; in low, moiſt or rich Grounds the Hills ſhou'd be higher and larger, but in dry, ſhallow, higher Grounds, they are made ſmall; the higher Hills produce larger Roots and Binds, and better Sets.

In *Auguſt*, when the Hops begin to be in Bell, with a Hoe or ſharp Shovel pare all the Allyes clean from Weeds, and throw the lighteſt of the Earth on the Tops of the Hills ſo as to make them

as

as large as a Bushel, but throw no Weeds on, nor cut any of the Binds with the Shovel; at the same Time, or rather before, Women shou'd be employ'd to strip the Leaves from the Vines 2 or 3 Feet above Ground, which will give the Hop more Air and Sun, and help the ripening thereof.

CHAP. XIV.

Watering of Hops.

HOPS suffer, and are greatly check'd in their Growth by a very dry Spring, especially in hot and dry Grounds, in such Case it wou'd be a great Advantage to the Hop, if at that Time, and in a dry Summer also, when the Hop is branching, or in Blossom, you had the Command of a Stream to give them a thorough Watering; flowing the Allyes with such Water, will be sufficient, provided you throw the Parings on the Hills immediately; if you have no such Stream at Command, yet if the Season continues very dry, and the Hops are like to fail on that Account, it will he worth your while, if you can get Water from Pitts, Ponds, Springs, or a Rivulet at a small Distance, to bring Water in Hogsheads to your Hop-Ground, and pour a Pail full of Water into each Hill, first making a Hole with a Stick or Iron Crow in the middle of the Hill, into which pour your Water by Degrees, till the Hill be well soak'd; and if the Weather still continues dry in Summer, repeat this watering 2 or 3 times in

the Seaſon, and be ſure after each watering to throw ſome of the Parings of your Allyes on your Hills, to keep them cool and moiſt.

This Sort of watering may be thought to be too troubleſome and expenſive, but when we conſider, that 2 or 3 ſuch Waterings, if the Hills be thoroughly ſoak'd, may make the Hops flouriſh in a dry Summer, when all your Neighbours fail; and that an Acre of good Hops in a failing Year may be worth 60, 80, or 100 *l.* and more, you ought not to ſpare your ſelf the Trouble of ſuch watering, which after all is but a trifling Expence; for if your Hills be 8 Feet diſtant from one another, there will be 1100 Hills on an Acre, if 7 Feet diſtant, there will be about 1400, and even in the laſt Caſe, allowing 4 Gallons of Water to each Hill, the 1400 Hills will require but 90 Hogsheads; this Number of Hogsheads, may be brought to your Ground from a moderate Diſtance, by a Man and a Horſe, in 3 or 4 Days, at the Expence of about a Crown for each watering; and by the means of ſo ſmall an Expence, inſtead of having little or no Hops at all, and looſing all your Expences, you may come to have the moſt beneficial Crop, not only by the Quantity of your Hops, but by the advanc'd Price they will of courſe bear in ſuch a Seaſon. If you infuſe Pigeon or Sheeps-Dung or other Manure in your Water, it will better nouriſh the Plants.

Tho' it muſt be own'd that in this Country we very ſeldom ſuffer by dry Summers, and the watering of Hop-Grounds may in a great Meaſure be ſav'd by frequent dreſſing and making the Hills large, But in great Droughts watering is of great uſe.

CHAP. XV.

Picking or Pulling of Hops.

ABOUT the latter End of *July* Hops begin to blow or bloſſom, and about the Beginning of *Auguſt* they bell, and are ſometimes ripe in forward Years, at the End of *Auguſt* or Beginning of *September*, but generally they are ripe in *Ireland* about the middle or latter End of *September*.

At ſuch Time as the Hops begin to change Colour, or are eaſily pull'd to pieces, and ſmell fragrantly, and the Seed begins to look brown and grows hard, you may conclude them ripe; then pick them with all the Expedition you can, for a Storm of Wind will do them great Miſchief at this Time, by breaking off the Branches, and by bruiſing and diſcolouring the Hops; and 'tis well known that Hops pick'd green and bright, will ſell for a third part more than thoſe that are diſcoulour'd and brown.

Before you begin to pull up the Poles, cut the Vines about 3 or 4 Feet from the Ground, for if you ſhou'd cut them near the Hills, eſpecially when the Hops are green, it wou'd occaſion an exceſſive flowing of the Sap, and thereby weaken and hurt the Root.

If the Poles ſtick ſo faſt in the Ground that you cannot raiſe them without great Difficulty and Hazard of breaking them, then make uſe of an Inſtrument call'd a *Dog*, (which together with ſome others contrived for the ſame Purpoſe, ſhall be deſcribed in

in the End of this Chapter) by the help of which you may eaſily raiſe them.

The moſt convenient way of picking Hops, is to make uſe of a long ſquare *Frame*, by ſome call'd a *Bin*, for that Purpoſe. This Frame is made of two Poles or pieces of Wood, nine or ten Feet long each, and 3 or 4 Inches thick, joined together about a Foot and half from each End by two other pieces three Feet long each, and ſupported by four Legs three Feet and a half high, ſo there will remain a Space in the Middle of the Frame ſix Feet long, three wide, and three and a half deep. In this Space fix a coarſe linen Cloth or Hop-bag cut open on one ſide, and let it lye hollow, hanging either by Tenter-hooks within-ſide the Frame, or ſtitck'd on the Outſide with wooden Skivers, in order to receive the Hops as they are pick'd. Three Men or Women, or four Boys or Girls may ſtand on each ſide the Frame at Work, and may pick two Poles at a Time.

When you have raiſed ſome Poles, bring them with the Hops and Vines on them, and lay them on the Sides of the Frame, or erect a forked Prop at each End of the Frame, upon which the Poles may be laid acroſs over the Frame, in order to be pick'd. There is no occaſion of ſtripping the Vines or Hawm from off the Poles before they are pick'd; the Workman who raiſes the Poles, generally carries them to the Frames, and the Frame being light may be eaſily remov'd from one part of the Hop-Ground to the other.

The ripeſt Hops ought to be firſt pick'd, but if the Hops appear to be equally ripe in all parts of the Plantation, begin to pick them on the *Eaſt* or *North*-ſide of the Ground, which will prevent the *South-weſt* Wind from breaking into the Garden.

Hav-

Having choſen a Plat of Ground whioh contains 11 Hills, place the Frame upon the Hill which is in the Center, and having pick'd them, remove the Frame into another piece of Ground of the ſame Extent, and ſo go on till you have finiſh'd the Whole.

Pick the Hops as clean from Leaves and Stalks as poſſibly you can, elſe they will damage you more in the Sale than they will advantage you in the Weight. Two or three Times a Day empty the Frame into a large Cloth made of coarſe Linen, and ſtitching it up with Skivers, carry it immediately to the Kiln to be dry'd, for if the Hops lye long in the Frame or Cloth, they will ſweat and be diſcolour'd.

If you meet with any brown Hops in picking, take Care to put them in a Basket by themſelves.

If the Weather be very hot, or rainy, cut no more Hops than may be pick'd in an Hour; and if poſſible, chuſe to gather them in fair Weather, when the Hops are dry, which will ſave ſome Expence of Coals, and will better preſerve their Colour when they are dry'd. Do not gather Hops when the Dew is on them, otherwiſe they will become mouldy.

When you have taken the Poles from the Hills, twiſt the Ends of the Binds together, that they may not get among Peoples Legs, and hinder their Work.

Before you draw your Poles, if you find that the Hops of one Pole entangle above with the Hops of another, cut them aſunder with a ſharp Hook, fix'd at the End of a long Pole.

If your Garden be large, it may be worth while to raiſe a Shed in the midſt of it, to ſhelter the Pickers and Hops from Sun and Rain, and to lay Hops in over Night, to be pick'd early next Morning before the Dew is off the other Hops; this Shed will alſo ſerve for preſerving your Poles in Winter; let not the Hops be wet when you gather them, but if

Dew

Dew or Rain be on them, ſhake the Pole and they will dry the ſooner; if your Hops be over-ripe, they will ſhed their Seed, wherein conſiſts the chief Strength of the Hop, neither will they look ſo green, but ſomewhat brown, which much diminiſheth the Value of them; therefore 'tis better to pull Hops a little before they are ripe, than to wait till they are full ripe; four Pound of undry'd Hops thorough ripe will make one of dry, and five Pound of Hops ſcarely ripe, yet in their Prime, make but one Pound of dry'd Hops.

There are two ſorts of Hops, the Green and the Brown, the firſt yields the beſt Colour by much, when they are dry'd, and the other bears a greater Quantity of Hops.

Brown Hops makes brown Ale, and Green Hops makes the pale Ale, which is the Reaſon why the latter is more eſteem'd.

As faſt as you pick your Hops, dry them on a Kiln, otherwiſe they will change Colour, but if you cannot immediatly dry them, and muſt keep them, ſpread them on ſome Floor, not too thick, and by that means the Damage they will receive in a Day or two will not be great.

They who have five or ſix Acres of Hops may employ ten Frames at a Time in picking.

There is a particular ſort of Hop, call'd the Early or Rath Hop, which is a Week or ten Days ſooner ripe than any other Hop; they are alſo in Bloſſom ſooner, and it is adviſeable to mark ſuch Hills at the bloſſoming Seaſon, by fixing ſome Sticks in them, and you muſt take Care to watch them at their Time of ripening, and pull them about a Week or ten Days before the others; if you omit this till all are ripe, then this ſort will be over-ripe, and will ſhed its Seed and look brown, and thereby not only be bad its ſelf, but ſpoil the Sale of any other it is

mixt

mixt with; and in regard there is a good deal of Trouble in pulling up such Hops, when they stand scattered in a Plantation, and in carrying them a great Way to a convenient Place to be pick'd, therefore some root them quite out of their Plantations, or set them in a particular Quarter by themselves.

I shall now give the Figures and Descriptions of such Instruments as are made use of for raising Hop-poles, and shew the manner of using them.

1. 2. 3. 3.

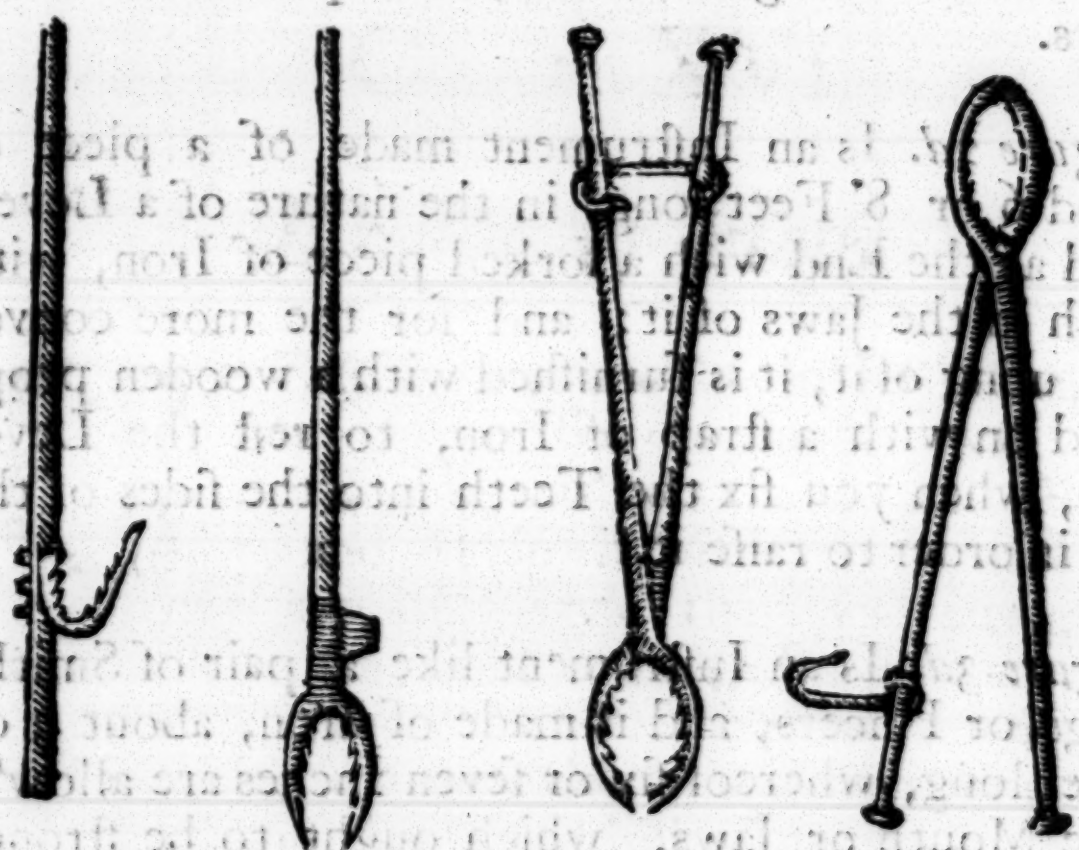

Figure 1st. Is an Instrument call'd a *Dog*, and made of a round piece of Wood about 6 or 7 Feet long, and 3 or 4 Inches thick; within a Foot or Foot and half of the Bottom of it, there is fix'd an Iron Fork with Teeth on the Insides, fastened with Screwes to the Wood; one side of the Fork is a-

bout 9 or 10 Inches long, and the other 12, an Inch broad, and 3 quarters of an Inch thick; the Fork is about 5 Inches wide at the upper part, and an Inch and half at the lower.

When you make uſe of this Inſtrument, ſtrike the forked piece of Iron into the ſide of the Pole, and reſting the lower End of the Inſtrument on the Hill, whilſt you pull the Pole to you with your left Hand, you may with the Strength of your right Hand eaſily raiſe it up. There is a ſlight in raiſing Poles with this Inſtrument, which a little Practice will ſoon bring one to; and becauſe it is the cheapeſt, handieſt, and moſt expeditious Inſtrument for raiſing Poles, and may be managed by one Man only, it is therefore in general Uſe, and preferred to all others.

Figure 2d. Is an Inſtrument made of a piece of Wood 6 or 8 Feet long, in the nature of a Lever, arm'd at the End with a forked piece of Iron, with Teeth in the Jaws of it; and for the more convenient uſing of it, it is furniſhed with a wooden prop, bound on with a ſtrap of Iron, to reſt the Lever upon, when you fix the Teeth into the ſides of the Pole in order to raiſe it.

Figure 3d. Is an Inſtrument like a pair of Smiths Tongs or Pincers, and is made of Iron, about 3 or 4 Feet long, whereof ſix or ſeven Inches are allow'd to the Mouth or Jaws, which ought to be ſtrong, and furniſhed with Teeth to take faſt hold of the Pole; it will be convenient to put a riding Hook on the Handles to keep them faſt together, when you have got a good hold of the Pole. When you uſe this Inſtrument, lay a little ſquare Block on the Top of the Hill, with a Handle to it for the better removing it from one Hill to another, and after you have

have claſped the loweſt part of the Pole with the Jaws, and drawn the Handles as cloſe as you can together with the help of the Riding-hook, reſt the Joint of the Pincers on the Block, then pulling the Pole towards you, at the ſame time preſs down the Handles with all your Strength, and you will eaſily weigh up the Pole. You may apply wooden Handles of 6 Feet long each, inſtead of Iron Handles, to this Inſtrument, which will make it come cheaper and ſerve better for Uſe.

CHAP. XVI.

Drying of Hops.

GREAT Care ought to be taken, that your Hops be thoroughly and evenly dry'd, in this lyes the greateſt Difficulty and Art in the Management of Hops; for if they are over-dry'd they will change Colour, look brown, and be judged to be burnt, and ſo loſe their Eſteem; and if they be under-dry'd, they will alſo loſe their Colour and Flavour; and it has been found that a handful of under-dry'd Hops has ſpoil'd many Pounds of other Hops, by taking away their pleaſant Smell and Colour.

The beſt way of drying Hops is with a Charcoal-Fire, on a Kiln cover'd with Hair-cloth, of the ſame Form and Faſhion which is us'd for drying of Malt. In ſuch Parts of *England*, where Hops grow, and a great deal of Malt is made, Hops are generally dried on the ordinary Malt-Kilns, but where

the Hop-Planters have a much greater Quantity of Hops than can be dried in due Time on their Malt-Kilns, (for Hops ought to be dry'd as ſoon as poſſible after they are pick'd) they build ſeveral ſmall Kilns on purpoſe for drying of Hops, and the Building is contriv'd in ſuch Manner and Form as ſhall be deſcrib'd at the End of this Chapter.

In drying of Hops, firſt lay the Hair-cloth very even on the Bed or Floor of the Kiln, and ſpread the green Hops thereon, about ſix Inches thick, laying them with a Rake as ſmooth and even as poſſible, not thicker in one place than another. Let the Kiln be firſt warm'd with a Fire before you lay on the Hops, then keep on an even and ſteady Fire under them, not too fierce at firſt, leſt you ſcorch them; and let not the Fire ſink and ſlacken, but rather increaſe till the Hops be near dry'd, leſt the Moiſture or Sweat, which the Fire has rais'd, fall back and diſcolour the Hops; after they have thus layn about 7, 8, or 9 Hours, and left off ſweating, and leap up when beaten with a Stick, then turn them upſide down with a broad Malt-Shovel, or Scoop made for that purpoſe, or caſt them up into a heap in the Middle, and then ſpread them equally on all ſides, and thus let them lye for 2 or 3 Hours more, till every Hop, if poſſible, be thoroughly dried; and then with the Hair-cloth remove them to the Heap, where they are to lye till they are bagg'd.

Keep your Fire at a conſtant Heat, and only at the Mouth of the Furnace, for the Air will ſufficiently diſperſe the Heat to all parts of the Kiln. If the Hops do not dry in one place as much as in the reſt, which you may perceive by touching them with a Stick or Wand, and obſerving whether they rattle or no, then make them thinner in ſuch places where they do not rattle ſo much.

Hops are then fully dry'd, when the inner Stalks are brittle and break ſhort upon being rubb'd, and when the Hop-leaves eaſily fall off, and feel very criſp; when you find them to crackle and leap a little, as they will do upon burſting of the Seeds, then 'tis time to take them off the Kiln.

If Wood or Turf be uſed for Fewel in drying, they ought to be charr'd firſt, for Smoak ſpoils the Colour and Smell of Hops.

Charr-Coal made of old rotten Poles is commonly made uſe of for this purpoſe. Cenders of Sea-Coal is very good, and 'tis found by Experience that *Kilkenny* Coal dry's Hops very well, becauſe it does not ſmoak, and gives a conſtant uniform Heat for a long Time; but great Caution ſhou'd be us'd that the Fire be not too hot and ſcorching; for in ſuch Caſe the Hops will be burnt, and loſe their Colour and Value; the Fire ought to be gentle and of a due Heat, and in order that it may be conſtantly the ſame, neither too ſtrong nor too weak, it may be of Service to make uſe of a *Thermometer*; this Inſtrument has a long ſlender hollow Glaſs-Tube, with a round Ball at Bottom, clos'd at both Ends, quite empty of Air, but partly fill'd with Spirit of Wine ting'd, which Liquor riſes or falls in the Tube, in Proportion as the outward Air is either hot or cold.

When you have once found out the Degree of Heat which is proper for drying of Hops, and mark'd it on the *Thermometer*, you may always after know how to regulate your Fire with great Exactneſs; for putting the *Thermometer* within-ſide the Kiln for ſome ſhort Time, you may obſerve by the heighth of the Liquor when the Heat is come to a right pitch, and when it is either too high or low, and ſo increaſe or ſlacken the Fire. Any Servant may, with the help of this Inſtrument be able to mend and correct the Fire with great Certainty,

and

and not be liable to commit Miſtakes in the drying of Hops, which often proves ſo fatal.

When you have begun to dry your Hops, loſe no Time in that Work, but employ Men Day and Night to attend them with the utmoſt Care, till all be dryed.

There is no certain Time for drying Hops on the Kiln, for if they are laid thick, or very moiſt or wet on the Hair-Cloth, or if the upper Floor of the Kiln be placed higher or more diſtant than ordinary from the Fire-place, they will take the longer Time in drying.

This farther Caution ſhould be obſerv'd in the drying of Hops, to keep every place about the Kiln ſo well cloſed up, that no Wind or Air may be ſuffer'd to come in at any Door, Window, or other Place; for if Wind blows on the Mouth of the Furnace, it will make the Fire too violent, and if cool Air be let in on the Hops while they are drying and in a Sweat, it would drive back the Steam and Sweat, and by that means diſcolour the Hops.

If you turn Hops while they ſweat, they will burn and loſe their Colour. Before you turn them, keep the Fire low, and after they are turn'd, refreſh the Fire again.

Some have propos'd, as an Improve-ment, to cover the Floor of the Kiln with double Tin-plates; by which Contrivance, they ſay, the Hops will be leſs injur'd in turning than on an Hair-Cloth, where they are apt to ſhed their Seed upon being turn'd; and any Fewel will ſerve, the Smoak being carry'd off another way; and in order to avoid any Occaſion of turning the Hops at all, it is farther propos'd to provide a Frame of Wood cover'd with Tin Plates, as broad as the Top of the kiln, and ſo contrived as to let down within a Foot of the Hops more or leſs, at the Time they are ready to turn,

which

which like a *Reverberatory* will reflect the Heat back on the Top of the Hops, by which means the Hops on the Top will be as ſoon dry'd as thoſe at the Bottom: But theſe Tin Contrivances, though they have been long known and ſpoke of, yet are ſeldom or ever uſed, the general Practice being to dry on Hair-Cloths.

It is obſerv'd that Hops dry'd in the Sun loſe their Richneſs of Flavour, as other Herbs do that are dry'd that way.

If Hops are laid on a Floor to dry, without uſing a Fire, they will loſe their Strength, will be apt to ſweat or ferment upon Change of Weather, and will not be fit for packing; Fire exhales the watery parts, and retains the oily, and thereby preſerves the Flavour and Colour. Where Kilns are made 8 Feet ſquare, a large Malt-ſhovel full of Charr-Coal, thrown into the Mouth of the Furnace, will laſt an Hour.

When the Hops are dry'd on the Kiln, remove them immediately into a cloſe Store-Room, and lay them there in Heaps to ſweat for three or four Days or more, in which Time they will grow tough and feel moiſt to the Hand; for if you ſhou'd attempt to bag them immediately from the Kiln, they wou'd all break to Powder, but if they lye a while cloſe cover'd with Blankets from the Air, they will bagg the better.

I ſhall now deſcribe the Form of ſuch Kilns as are made on purpoſe for drying of Hops, when the Quantity of them is too large to be dry'd in due Time on Malt-Kilns.

Suppoſe a Hop-planter has eight or ten *Engliſh* Acres of Hop-Ground, he will then have occaſion for a Building of about 60 Feet long, and 15 Feet wide in the Clear; at one End of the Building there is to be a boarded Room for receiving the green Hops, which are brought from the Hop-Ground,

and

and where they ſhould be ſpread and lye till there is room on the Kilns for drying them; at the other End of the Building let there be another large boarded Room, for receiving the Hops from the Kiln when they are dry'd, and where they may lye in Heaps to ſweat till they are fit for bagging. In the intermediate part of the Building 3 or 4 Kilns of 8 or 10 Feet ſquare each, may he made cloſe to one another in the following Manner.

Suppoſe the middle Building to be 28 Feet long, and 15 Feet wide, then there will be Room for 3 Kilns of 8 Feet ſquare each in the Clear, and for their reſpective Walls; theſe Kilns ſhould lye in a Line along the Back-Wall, and will come forward above 9 Feet, and then there will remain a Paſſage of 5 Feet wide, and 28 long at the Front of the Kilns.

Each Kiln is thus form'd and made; build the Walls of Brick 9 Inches thick, and let each of the four Sides be eight Feet long in the Clear, and ſeven Feet high; the principal parts of the Kiln are the Bed or Floor in the upper part, whereon the Hops are laid to be dry'd, and the Furnace, Steddle or Lanthorn for the Fire in the lower part. The Bed or Floor in a Kiln of 8 Feet ſquare, ſhould be about 6 Feet from the lower Floor, ſo that it will be a Foot lower than the upper part of the Wall; this Foot of Wall riſing above the Bed, ſerves to keep in the Hops on the Kiln, and for Men to walk upon round about the Kiln, to look to the drying of the Hops; this Bed or Floor may be made of wooden Rails an Inch ſquare, laid very even and level into a croſs Beam a quartet of an Inch aſunder; or if the Kiln be arch'd below, the Floor may be laid with long Bricks or Stones, reſting on the Tops of the Arches at about 2 Inches Diſtance from one another.

In making the lower part of the Kiln, place the Mouth of the Furnace at the Bottom in the Middle of the Front Wall of the Kiln, 14 Inches wide and ſixteen high; joining to the Mouth of the Furnace on the Inſide, build the Steddle or Lanthorn of Brick four Inches thick, this Lanthorn ſhould be 14 or 16 Inches wide, three Feet perpendicular in the ſide Walls, and reach from the Front Wall of the Kiln to within a Foot and half of the Back Wall, leaving Room for a Man to paſs between the Lanthorn and Back Wall, ſo that it will be about ſix Feet long. On the ſide-Walls, Bricks of a Foot length are to be rais'd on their Ends, leaning to and bearing upon one another, ſo as to form a ſort of an Arch a-top, or like the Roof of a Houſe; or the upper part may be duely arch'd. See *Fig.* 4.

In building the ſide-Walls of the Lanthorn, after you have laid the two firſt Rows of Brick, then in the three or four Rows following, at the End of every Brick leave an open ſpace or hole, four or five Inches wide, Chequer-wiſe, both on the Sides and Back-part, and lay the higheſt Row or two of Brick without any holes, for the better ſupport of the arched Roof; ſo there will be 3 or 4 Rows of holes, which are deſigned to convey the Heat equally to all parts under the Hair-Cloth. The arched Roof ſhou'd be well plaſtered within-ſide with Hair and Lime to reflect the Heat the better.

On the Front-part of the Kiln, on one ſide of the Furnace, a ſmall Door ſhou'd be made 2 Feet from the Ground, three Feet high and two wide, ſo that a Man may eaſily get in to ſet every Thing to rights about the Steddle. A pair of Stairs ſhould alſo be made to go to the upper Floor, where the Hops are dryed; and as you have a Paſſage below 5 Feet wide along the Front of the Kilns, ſo you will have the like Paſſage directly over-head in the upper Floor,

which will be of uſe for bringing the green Hops from one Room, and laying them on the Kiln, and for carrying them when dryed to your Store-Room; both which Rooms for greater Conveniency ſhould be on the ſame Floor with the upper part of the Kiln.

This farther Caution ſhou'd be uſed, that no holes be made within a Foot of the Fire-place or Mouth of the Furnace, and that all parts about the Kiln be made ſo cloſe that no Air may poſſibly get in. The further End of the Steddle ſhould be built of Brick up to the Top, with holes in it as in the Sides.

The Kiln ought to be ſquare, and may be of ten, twelve or fourteen Feet over at the Top, but there ought to be a due Proportion between the Heighth and Breadth of the Kiln, and the Bigneſs of the Steddle where the Fire is kept, *viz.* if the Kiln be twelve Feet ſquare on the Top, it ought to be nine Feet high from the Fire, and the Steddle ought to be ſix Feet and a half ſquare, and ſo proportionable in other Dimenſions. Theſe Kilns are made at a ſmall Expence.

CHAP. XVII.

Bagging of Hops.

HOPS break all to Powder if they are bag'd hot from the Kiln, to prevent which they ſhould be layd in a heap to ſweat and grow tough: There is no certain Time for their ſweating, that varies according to the Weather; 3 or 4 Dsys are commonly ſufficient,

ent, ſometimes many more Days are requir'd; but this is a certain Rule, that when you find the Hops feel moiſt and clammy, and that they can be ſqeezed in your Hand, or troden cloſe, without breaking, then they are fit for bagging, and the harder they are troden the better they will keep.

Bags in which Hops are pack'd up, are made of coarſe Linnen Cloth, four Ells and a half of that which is Ell-wide, or between eleven and twelve Yards of that which is three Quarters wide, will make a Bag to contain two hundred and a half, or two hundred and a quarter Weight. Theſe Bags are about eleven Feet long, and near two Yards and a half round; ſmall Bags, call'd Pockets, contain about half the aforeſaid Weight: The thicker and cloſer the Bag is the better it will keep the Hops.

The manner of bagging is this: Make a round or ſquare Hole (but the round is more convenient) about two Feet and two Inches over, in the Floor of the Chamber, where the Hops are laid in heaps, large enough to receive the Bag, and for a Man to go with Eaſe up and down; and with a piece of Packthread tye a handful of Hops in each lower Corner of the Bag, to ſerve as Handles for the eaſy lifting or removing the Bag; and with Packthread faſten the Mouth of the Bag to a Hoop ſomething larger than the Mouth of the Hole, that the Hoop may reſt on the Edges of it, and ſtrong enough to bear the Weight of the Hops when the Bag is full, and of the Man that treads them; the upper part of the Bag being thus fix'd by the Hoop, let the Bag down thorough the Hole, not ſo near to the lower Floor, but that it may have Liberty to hang free without touching the Ground; then throw in a Buſhel or two of Hops, and let the Man go into the Bag and tread the Hops on every ſide, with

ſuch Shoes as have no Heels, as hard as he can till they lye cloſe; let another Man or Boy ſtill caſt in more Hops into the Bag, when the former parcels are well troden; continue the ſame Work till the Bag be full; when that is done, let down the Bag by untying the Hoop, and ſow up the Mouth of the Bag as cloſe as you can, obſerving at the ſame Time to tye up ſome Hops in the upper Corners as you did before in the lower.

When the Hops are thus bagg'd, lay them not upon an earthen but on a boarded Floor, and in a dry Place, for wet and moiſt Air will injure them much; the harder the Hops are preſs'd, and the cloſer and thicker the Bag is, the longer will the Hops keep; but take Care of Rats and Mice, which are apt to ſpoil Hops, not by eating them, but by making Neſts and lodging in them.

Some in treading the Hops make uſe of a fifty pound Weight faſten'd to a Rope, and place it in the Middle of the Bag; the Man in the Bag treads about it with his Feet, and lifts it up now and then to preſs the Hops the cloſer together.

CHAP. XVIII.

Laying up and preſerving Poles.

AS ſoon as the Hops are pick'd, ſtrip off the Hawm or Vines from the Poles; then take Care as your laſt Work, to preſerve the Poles during the Winter, which is done either by ſtacking, pileing, or houſeing. The ſtacking is thus perform'd; ſet up three Poles like an erect

erect Triangle, or rather ſix Poles, let into the Ground with an Iron Crow, and plac'd round about, but inclining to one another ſo as to meet, and be tyed faſt together with Ropes of the Hawm, within a Yard of the Top; againſt this Frame the Poles ought to be ſet up ſpeedily, for if they be ſuffer'd to lye on the Ground, eſpecially in wet Weather, they will receive more Damage in a Fortnight than by their ſtanding out all the reſt of the Year; when they are ſet up, about 300 to a Stack, bind them about with a little twiſted Hawm to keep them together; by which means the outward Poles only are ſubject to the Injuries of Weather, and keep all the inner Poles dry, except only the Tops of them, which for the moſt part are expos'd to the Air, as are the Bottoms alſo to the moiſt Ground; to prevent which, ſome cover the Tops of the Stacks with Hawm, and lay Stones, Bricks, or Sand at Bottom to preſerve the But-ends from rotting.

Many chuſe to pile them up at length in ſeveral Places of the Hop-Ground, laying three or four old Poles athwart at Bottom to keep them from the moiſt Ground, and ſetting ſeveral Poles erect in the Ground on each ſide the Pile; they then lay the Poles on one another, taking Care that the ſmaller Ends may lye inwards, and the bigger outwards, on which account the Pile ſhould be ſomewhat longer than the Poles; when the Pile is rais'd high enough, then with Ropes of Hawm bind the Poles that ſtand on the one ſide overthwart to the Poles on the other, to keep them upright and ſteady, and cover them well with Hawm to defend them againſt Rain. This is a better way of preſerving Poles than the former; but the beſt way of all is to build a Shed or two in your Hop-Ground, which may ſerve as a Shelter for picking the Hops in Summer, and for preſerving the Poles in Winter, and will ſoon requite the Charge

Charge of building; this way of ſecuring Poles is more neceſſary not only to ſave them from the Damage they would receive by frequent Rains, and the great Moiſture of our Air, but to preſerve them from being ſtolen, which they would be very ſuject to if they lay expos'd abroad; as ſoon as the Hawm or Binds are wither'd and dry, burn them and ſpread the Aſhes on the Ground.

CHAP. XIX.

Manure and Tillage in Winter.

FROM *October* to *March* there is nothing to be done in the Hop-ground but to provide and bring Manure into it, and to give the Allyes a Winters digging or plowing.

If you bring Dung into your Ground, beſure it be well rotted, and lay it on the Allyes to mix with the Earth, and not on the Hills, Dung being apt to produce Vermin, which are injurious to Hops; cold Dungs, ſuch as Cows and Hogs Dung, are better for Hops than Horſe-Dung, unleſs the Soil be cold and wet, and then hot Dung, ſuch as Pigeons, will do well. You may let the Dung lye on the Allyes all the Winter till *February*, but then dig or plow it in; but it will be better to dig or plow your Allyes in Winter, and then you need not do it in *February*.

If you prepare your Manure or Compoſt in ſome Place out of the Hop-ground, mix one part of Dung with two parts of good Mould, or make a Compoſt of Lime, Marle, ſtrong Earth, and Scourings of Ditches

Ditches and Dung for light Grounds, and a Compoſt of Sand, Aſhes, Limeſtone-Gravel, to be mixt with ſome of the former Ingredients, for ſtrong Ground, let them lye in heaps to incorporate together during the Winter, and in *February* bring this Compoſt to your Hop-Ground and lay it on or near the Hills.

A ſmall dunging every ſecond Year is ſufficient, and a plentiful dunging will ſerve for three Years, if the Soil be tolerably good.

Dung was formerly more in Uſe than it is at preſent, and though it is now much uſed in ſeveral Places where Hops grow, yet this is becauſe they have no other Manure, and 'tis not to be doubted but that Lime, Limeſtone Gravel, Sea-Sand, Marle, eſpecially the ſhelly Marle, Aſhes, and many other Manures and Compoſts, which may be had with Eaſe and Plenty in many Parts of the Kingdom, wou'd do better than Dung, and laſt much longer.

The Management of the Hop-Ground the third and every ſubſequent Year is the ſame, you muſt give it a Winter plowing or digging, and either lay Manure then on, or bring it on in Spring; and in the Beginning of Summer give it another plowing or digging, and ſeveral hoeings, both to deſtroy the Weeds, and to prepare Soil to lay on the Hills from Time to Time; ſo that the Hop-Gardens require a conſtant Care and Attendance, eſpecially from the Beginning of *March* to the Firſt of *October*, and you may lay this down as a certain Rule, that the more Pains you take, and the greater Expence you are at in the due Culture of the Ground and Management of the Hops, the greater Profit you will have.

CHAP. XX.

The Charge and Profit of Hop-Grounds.

HAVING already mentioned in general the Profit and Charge of Hop-Grounds, it may be proper to take Notice in particular, of the Expence attending the ſeveral Articles in the Management of Hops.

The Charge of an Acre of Hop-Ground in ſome Parts of *England* is computed thus: 3*l.* for the Husbandry, 4*l.* for the wear of Poles, 5*l.* for picking and drying, 1*l.* 10*s.* for Dung, 1*l.* for Rent, and 10*s.* for Tyth, in all 15*l.* a Year, and in ſome Places they pay 4 or 5 Pound an Acre yearly for the Rent of the Land.

The Hop-Planters in *England* commonly agree with Hop-Dreſſers to do all the Husbandry Part for 3*l.* to 3*l.* 10*s.* *per* Acre, which takes in the Summer and Winter Digging of the Ground, the pruning and dreſſing the Hops and Hills, the poling and tying, ſeveral hoeings, and making up the Hills from Time to Time, the laying the Dung on the Ground, and all other Work, except the bringing the Dung to the Ground, and the picking and drying the Hops, which Work is done by others. So that a Gentleman there has little Trouble with his Hop-Ground, he only takes Care that the Undertaker does every Part of the Work in the proper Time, and 'tis ſo much the Intereſt of the Undertaker to do ſo, that if he neglects hoeing, when the Weeds appear, he will by ſuch Neglect greatly multiply his Trouble and Labour in rooting them out after.

An

An *Engliſh* Acre requires about a 1000 Poles; the Price of Poles varies according to their Bigneſs; 'tis uſual in ſeveral Places to give as many Shillings for a 100 Poles, as the Poles are Feet long, ſo for a 100 Poles of 20 Feet long they give 20 *s.* but where Poles are in Plenty they give but 15 *s.* for ſuch; 'tis computed that a recruit of 500 Poles yearly will keep an *Engliſh* Acre of Hop-Ground in conſtant Repair.

So that Poles are about a third Part of the yearly Charge, the picking and drying another third, and the reſt is laid out in the managing of the Ground, *&c.*

The Summer and Winter Tillage of the Ground being chiefly deſign'd to deſtroy the Weeds, and to make the Ground fine and fit for the Nouriſhment of Hops, by often breaking and expoſing it to the Sun, Froſt and Rain; it is conceiv'd that hoe-plowing the Ground will do this ſufficiently, and much cheaper than it can be done by the Spade, for it may be hoe-plow'd 6 or 8 times for the Expence of one Digging.

When we make mention of a Plow in the Tillage of Hop-Ground, we do not mean the common, large, heavy Plow, but a ſmall, light, ſhort Plow, ſometime call'd the Garden or Hoe-Plow; ſuch a Plow will plow or hoe 2 Acres of Hop-Ground in a Day with two Horſes only, and needs no Coulter, the new invented Patent-Plow lately brought from *England*, will do very well for this Purpoſe, and may be made much lighter and ſlighter for Hop-Grounds than for Corn-Land. The Hoe-Plow may alſo be drawn by Horſes in a Shaft.

Some farther Obſervations on Hops.

WHen Hop-Sets have been planted two Years, then in the Beginning of the third Year you may cut off Sets from the Roots, for planting new Ground, or ſupplying weak Hills in the ſame Ground.

If you find the Binds of any Hill weak and ſtarving, which might have been occaſion'd by hurting the Root or other Miſmanagement, plant new Sets in that Hill.

If a Blaſt happens, take off all the Leaves as far as you can reach.

It is of little uſe to weed the Hills by the Hand, unleſs the Weeds are flower'd or ſeeded, becauſe in raiſing the Hills, ſmall Weeds will be buried.

Hops growing cloſe to Hedges are more ſubject to Blightes and Hony-Dews; therefore plant at ſome ſmall Diſtance from them, and make your Cart-roads cloſe to the Hedges, and thorough the Middle of your Plantation, for the more convenient carrying Manure to all Parts of the Ground; it is in theſe Walks they pick the early Hop.

The common Annoyances of Hops are the *Fen* or Mould in very wet Seaſons; and Hony-Dews and green Lice in dry Summers; as the Fen, Mould, or Moſs is occaſion'd by the Hops being over-charg'd with Rain in the Root, Leaves and Stalk, if the Weather continues wet and cold, the only Help againſt this Diſtemper, is to keep the Ground as dry as poſſible, and to give the Hops all the Air and Sun you can, to make them perſpire freely, and diſcharge the Moiſture. And leaſt the Seeds or Roots of ſuch Mould or Moſs ſhou'd continue, and increaſe in the Ground, it is adviſ'd to burn all the Leaves and Stalks of ſuch Hops which have been ſo infected.

Hony-

Hony-Dews or Mil-Dews happen moſt in low Grounds lying near Water, and in Places which are cloſe ſhelter'd; this Dew appears like Hony on the Leaves, ſweet and clammy; and for want of a free Air lyes long on the Leaves, and invites Inſects and green Lice to feed on it, and to lodge and breed on the Leaves, which they intirely devour, and ſo ruin the Hop; for if the Leaves of a Tree are deſtroy'd, it cannot then draw Nouriſhment for the Fruit.

The beſt way to prevent this Evil, is to plant your Hops on an open riſing Ground, and to take Care that it be not too cloſe ſhelter'd on the *Weſt* or *South* ſides, but that it may have free Air, and that the Hills be not ſet too near together.

But if the Hony-Dew ſhould happen to fall on the Hops, and green Lice ſucceed and increaſe, the Hops will be in great Danger of being ruin'd, unleſs reliev'd by Showers of Rain, which only can deſtroy thoſe Vermin; it has ſometimes happen'd, that when a Plantation has been almoſt devour'd and given over for loſt, a ſeaſonable fall of Rain has quite recover'd them and deſtroy'd the Lice: As a Relief in caſe of ſuch Extremity, ſome recommend the uſe of a ſmall watering Engin made at a ſmall Expence, which caſts Water 15 or 20 Yards all round; for the Water being forced up high in the Air, and falling down in the Form of Rain, will both relieve the Hops and kill the Vermin, by which means a Hop-Yard may be recover'd from Deſtruction in a ſhort Time and at a ſmall Expence.

Some adviſe, when a Plantation of Hops is firſt made, to plant Fruit-Trees in it at 40 Feet diſtance, becauſe by the Time that the Ground is much worn out in raiſing Hops, which may be in 15 or 20 Years, the Fruit-Trees will be grown up to Perfection.

Directions for Raiſing Hop-Poles.

THe want of Poles is an Objection too often made againſt the planting of Hops; but this Objection will ſoon be remov'd, when we conſider, that there is not any Part of this Kingdom, which is fit for raiſing Hops, but what is fit alſo for raiſing Hop-Poles of one Kind or other; Ground that lyes low, wet, cold, marſhy, boggy, or near Rivers, is fit for all the Aquatick Kind, ſuch as *Poplars*, *Abeles*, *Alders*, *Willows*, *Oziers*, and *Sallyes*, which will produce Hop-Poles in four or five Years time from their firſt planting; this ſort of Land is often fit for nothing elſe, and yet will raiſe great Quantities of theſe ſorts of Trees in a few Years, and at a ſmall Expence.

If your Soil be dry and warm, or a ſtrong mellow rich Loam, *Aſh* and *Cheſnut*, which make the beſt Poles for Hops, will thrive greatly therein, and be fit for Poles in 9 or 10 Years from their firſt planting. And if you plant them round your Hop-Ground, they will both ſhelter the Ground, and ſupply you with Poles, without any Expence of Carriage. *Elms* alſo are quick Growers, and when planted cloſe together, grow tall and ſtraight, and make good Poles.

Aſh and *Cheſnut* Poles are tough and durable, and three Sets of them will laſt twenty Years; but Poles of *Alder*, *Poplar*, *Abele*, *Oziers*, or *Sallyes* ſoon rot, or grow brittle, and are eaſily broke; ſo that it will take 5 Sets of them at leaſt to laſt 20 Years; for this Reaſon Poles of *Aſh* are generally made uſe of in *England*; and though it is recommended to plant the Aquatick Kinds for your firſt Supply, yet it is ad-

advis'd to make Plantations of *Aſh* and *Cheſnut*, to come in for the future Recruit of your Hopgrounds.

If you begin with a quarter of an *Iriſh* Acre to plant Hops in, this Quantity of Ground will contain about 300 Hills, and at the Rate of 5 Sets or Plants to a Hill, will require 1500 Sets, which will be as many as you can conveniently furniſh your ſelf with from your Neighbours at your firſt ſetting out; theſe Sets in two Years after planting, and not ſooner, will ſupply you with a new Stock of Sets ſufficient to plant out an Acre or two, aud from that Time forward you will have enough to ſtock many Plantations.

In the firſt Year after planting you need no Poles at all, but twiſt all the Vines together in a Knot on the Top of the Hill, or give them Poles of four or five Feet long. The ſecond Year, Poles of 10 or 12 Feet long will do, but the third Year, and every Year following, Poles of ſixten Feet and upwards, according to the ſtrength of your Ground, are neceſſary; the quarter of an Acre you begin with, will take 900 ſuch Poles, which you muſt procure as well as you can from your Neighbours, if you are not already provided. The Sets firſt planted in the Nurſery of a quarter of an Acre, will in two Years furniſh you with a Stock of Sets to plant a large Plantation, and thoſe Sets ſo planted out will in two Years more require Poles of full ſize, ſo that in four Years Time you may have a large Quantity of Hops grown up fit for poling, and in that Time the *Alders*, *Poplars*, and *Abeles* which were planted when you firſt began your Nurſery of Hops, will be grown large enough to ſerve your Occaſions, and hold out till the *Aſhen* Poles are fit for Uſe; ſo that the want of Poles will be no Delay, ſince you may

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be furniſh'd with a ſtock of Poles as ſoon almoſt as you can have a Quantity of Hops fit for poling.

How to Plant POPLARS, ABELES, ALDERS, &c. *for Hop-Poles.*

IF the Ground, you deſign to plant *Alders*, *Poplars*, *Abeles*, *Willows*, *Oziers*, or *Sallyes* in, be very wet, and over-charg'd with Water, make Drains in it to carry off the ſuper-abundant Water, and in the Beginning of Winter dig the whole Ground, ſuppoſe an Acre, as deep as you can, dividing it into Ridges or Beds ſix Feet wide, and make a ſmall Trench of a Foot and half wide and a Foot deep between each Bed; if this Ground will bear plowing well, you may ſave ſome Expence, but you will find that trenching with the Spade will make ample amends for the Charge, by the quicker and ſtronger Growth of the Trees. Your Ground being thus prepar'd, in *February* following ſet about planting. *Poplars* and *Abeles* are generally propagated from Suckers, which ought to be planted as ſhallow as poſſible, they may alſo be encreas'd from large Cuttings or Truncheons, or Branches of the laſt Year's Growth. *Alders*, *Willows*, *Sallyes*, and *Oziers* are propagated from large Cuttings or Truncheons a Foot and half or two Feet long, and the thicker they are the better.

Theſe Truncheons ought to be cut ſloping at the Ends, and when you plant them, put them at 3 Feet Diſtance from one another, and do not drive them down perpendicularly, but thruſt them ſlopeing into the Earth, leaving about 6 Inches above Ground.

Ground. Take Care not to bruiſe or ſtrip the Bark in truſting their Ends into the Earth; and to prevent this in Ground that is ſtiff and hard, the beſt way is to make a Hole with an Iron Crow or Stick, and then thruſt them in, and afterwards with fine Earth cloſe up the Holes very firm about them; but if the Ground be looſe, there will be no Occaſion of making Holes with a Stick.

Theſe Plantations ſhould be kept clean from Weeds the firſt two Years by frequent hoeing, after which Time they themſelves will keep down all Weeds; take Care in the Beginning of every Seaſon to break or rub off all the Side-Buds or Shoots, which will make them grow taller and ſtraiter. Preſerve at firſt but one good leading Shoot, or two at moſt on thoſe Truncheons, and in four or five Years they will be large enough to make Poles, and when they are cut down, you may preſerve five or ſix good Shoots on each Stock, and thin them as you find Occaſion; lay the Cuttings of *Alder* in Water for the ſpace of two Days before you plant them, and cut Poles from theſe Trees either in *October* before Winter comes on, or in *February* when the Winter Colds are over.

How to Plant ASH *and* CHESNUT *for Poles.*

ASH thrives beſt in the richeſt Soil, and generally is rais'd ſtom Seed (call'd Keys) for *Aſh*-ſuckers have ſeldom good Roots, and do not grow with near that Vigour as thoſe rais'd from Keys; theſe Keys are gather'd about the End of *No-*

November, when they begin to fall, or Beginning of *December*, and then ſhould be either bury'd in a Hole in the Ground, placing a Layer of Keys and a Layer of Mould, *Stratum ſuper Stratum*, till the Hole be full, where they are to continue till the *February* come Twelve-month after, and then ſhould be taken up and ſowed in Seed-Beds; or they may at firſt be put into Seed-Beds, not too deep, but at the Depth of 2 Inches at moſt, but will not come up untill the ſecond Spring after ſowing, during which Time they ſhould be carefully kept clean from Weeds, and water'd in very dry and hot Weather.

When the young *Aſh* come up, you muſt keep them water'd during the Spring and Summer, if the Weather be dry, and conſtantly weed them; and in *October* following take them out of the Seed-Bed whith a Trowel, to prevent their Roots from being ſtrain'd in drawing, which cauſes them to periſh after tranſplanting. When you remove them from the Seed-Bed to the Nurſery-Ground, prune off their downright or Tap-Roots, but not any of their Side-Roots, you muſt alſo preſerve their Tops from the Knife and Bill at all Times, excepting the ſecond Year after tranſplanting, at which Time you muſt cut off their Heads within an Inch or two of the Ground, which will cauſe them the next Spring to ſhoot with great Vigour.

If the Seedlings are ſmall at the End of the Year, 'tis beſt to let them remain in the Seed-Beds a Year or two longer, untill they are large enough to tranſplant, which is when they are about the Bigneſs of a Tobacco-Pipe or Gooſe-Quill; before you plant them in your Nurſery-Ground, take Care that ſuch Ground be well dug, made fine, and clear'd from Weeds;

Weeds; then in the Beginning of Winter plant the Seedlings in ſtraight Lines in Beds at a Foot Diſtance every way from one another, leaving between every fourth and fifth Row an Ally of two Feet wide: They are to continue in this Nurſery two or three Years at moſt, after which Time they ſhou'd be tranſplanted to ſuch Places where they are deſign'd to remain.

When you tranſplant from your Nurſery, which is to be done in *October*, or in *February*, if you have ſlipt that Time, take Care not to bruiſe or ſpoil the Roots, preſerve as many of them as you can with ſome Earth about them; having ſome Time before dug and prepar'd the Ground into which you deſign to tranſplant the *Aſh*, and which ought to be a good Soile, and not wet, then ſet them at three or four Feet Diſtance; if you plant them at three Feet Diſtance, an *Iriſh* Acre will contain 7840 Plants, if at four Feet, 4410, if at five Feet, 2822 Plants. The firſt Year or two after tranſplanting, the Ground ſhould be hoed and dug about them.

There is another Method of raiſing Coppices or Plantations of *Aſh*, which is attended with leſs Charge and Trouble, and ſeldom fails of Succeſs, 'tis this:

Make Choice of very good Land, and give it a Summer's ploughing to mellow and to deſtroy the Roots of Weeds and Graſs, eſpecially Scutch-Graſs, prepare this Ground for Barley to be ſown in the Spring, and at the ſame Time that you ſow your Barley, ſow alſo *Aſh*-Keys, not at all thick; by which means as the Keys will not come up untill the next Sring after ſowing, you will have the Benefit of a Crop of Barley the firſt Year. Early in the Spring following give the Land a thin hoeing,

which will looſen and mellow the Earth, ſo that the tender Plumes or Shoots may with eaſe riſe thorough the ſame.

When the young Seedlings have riſen high enough to ſtand the Hoe, then hoe them out, leaving but one promiſing Plant at three, four, or five Feet Diſtance from one another; the oftner the Seedlings have the Earth ſtirr'd about them with hoeing, the better they will thrive. In the Beginning of the following Winter the Surface of the Ground ſhou'd be lightly dug about half a Spit deep, that the tender Fibres may eaſily ſtrike therein, and afterwards hoe them in the Spring when the Weeds begin to riſe; and thus continue to do, untill the Shade of the Nurſery ſhall prevent their farther Growth, which will be in three or four Years Time.

There is another way of planting young Trees, which has been practic'd with Succeſs in ſeveral Places at a ſmall Expence, and may be apply'd to the raiſing of Hop-Poles, which is this. Chuſe a Piece of Ley-Ground of a proper Soil, and well ſhelter'd on all Sides, eſpecially the *Weſt*; and lay it out in Ridges as for *Potatoes*, making Trenches a Foot and half wide and two or three Spit deep: when you have laid the upper Sod on one ſide of the Trench, the Graſs-ſide downwards, break the Mould of it fine, and throw a little more fine Earth from the Trench upon it, then take a young *Aſh* from about ten to fifteen Inches long, having before lopt off the Head to that Length, and lay it on the fine Earth, the Roots lying inwards, as is in laying Quicks, then cover it with fine Mould taken from the Trench three or four Inches thick, but leave about two Inches of the Top of the Plant uncover'd on the ſide of the Trench: At two or three Feet Diſtance plant another *Aſh* in the ſame manner, and

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ſo on till you have done the whole Field; when you have laid the freſh Mould on the Roots, then cut the Graſs-Sods which lye between each Plant, and lay them over the fine Mould upon the Plant, by which means the Plants will have ſmall Hillocks of good Mould about them, ſufficient to ſave them from drying Winds and the Heat of the Sun. Let the Ridges be ſix or ſeven Feet over, ſo you will have the Trees at two or three Feet aſunder in the Row, and each Row ſix or ſeven Feet diſtant from one another; by which Means all the Trees will have ſufficient Air and Room to ſpread their Roots, and may be very eaſily hoed or wed; in planting Trees after this manner, you dig but about a fourth of the Ground; but for ſeveral Years after, and until the Trees are grown up large and ſpreading, you may make uſe of half the Ridge, either for *Potatoes* or any other Fruit or Grain.

It is recommended as very material to the Growth of Trees in this manner, that the Trenches be made from the *South-Weſt* to the *North-Eaſt*, ſo that all the young Trees will lye faceing the *South-Eaſt*, by which means they will have the Benefit of the Sun, and not be expoſed to the *Weſt* or *North-Weſt* Winds, which check and ſtunt all young Trees that lye expos'd to them.

Elms, *Beech*, and many other Trees may be rais'd in great Plenty, by planting in fine Mould the ſmall Shoots of the Branches of the laſt Year's Growth, after you have ſlipt them off from the larger Branches; one large Tree will furniſh a great Number of ſuch Shoots, which ought to be ſet in *February* with their Tops on, and water'd in the Spring; ſuch Plants ſeldom fail, and ſupply a Stock of Trees much ſooner than can be done from Stools, Layers or Seeds.

Some adviſe the ſowing of *Cheſnuts*, *Acorns* and *Hazelnuts*, with *Aſh*-Keys, which Nuts ſhould be kept in moiſt Sand from the Time of their gathering to the Seaſon for ſowing, or otherwiſe they will ſhrivel and periſh; the ſowing of theſe ſorts together is recommended for this Reaſon, that ſome of them ſtrike their Roots deeper than others, and conſequently are not like to rob one another of their due Nouriſhment as much as if they had been all of one Kind.

Cheſnuts make admirable Poles, and ſhou'd be ſown in deep Drills, and manag'd afterwards as the *Aſh*.

At nine or ten Years Growth, *Aſh* may be cut for Poles, and after the firſt cutting, each Stock will throw out four or five good Shoots at leaſt, which will be fit for Poles in 7 or 8 Years after.

The Seaſon of the Year for cutting *Aſhen* Poles is about the Middle of *December*, when their Sap is moſt condens'd by the Winters Cold; and in the Spring following they will ſhoot up again with Vigour, but take Care to cut them off ſloping about ſix Inches above Ground; ſome recommend that the Face of their Cuts be towards the *South*, that the Sun may the ſooner heal their Wounds, by drawing up the natural Juices to the Face of the Cut, and drying them there, whereby they will be leſs ſubject to ſoak Wet. But others are afraid, that if the Cuts lye towards the *South*, they will be more lyable to crack, open, and ſoak Rain: But Experience muſt determine which Way is beſt.

There is one Caution to be conſtantly obſerv'd in all Plantations of young Trees, that they be ſo well fenc'd and guarded, that no Cattle at any Time be ſuffer'd to brouze upon them, which they will not fail to do, if they can get into them; for if the leading Shoots be bit off, there is an End of that Growth,

Growth, and you muſt cut down all ſuch Trees as have been thus cropp'd, within ſix Inches of the Ground.

An *Iriſh* Acre of Hop-Ground will at the firſt planting require 3300 Poles, if the Hills be 8 Feet diſtant from one another, 4320 Poles if 7 Feet diſtant, and 5880 if but 6 Feet diſtant; the Diſtances being computed from the Center of one Hill to the Center of another; to recruit, and keep an Acre of Hop-Ground in conſtant Repair, will require about 700 Poles yearly. One Acre of Ground planted as above mention'd, with *Aſh*, *Alder*, or *Poplar*, &c. will be ſufficient at the firſt cutting down to ſtock at leaſt an Acre of new Hop-Ground with Poles, or recruit four Acres, and at the ſecond cutting down will ſupply 3 or four times that Number of Acres with Poles.

The providing of Poles makes about a third part of the yearly Expence of a Hop-Ground in *England*, where Poles are ſold at a reaſonable Price; but a Quantity of good large Poles, ſuch as thoſe of 20 Feet long, and 9 or 10 Inches in the round at Bottom, cannot now be bought in *Ireland* for 20, 30, or even 40 *s.* the Hundred, yet if the Hop-Planter will himſelf raiſe Cppices of them as herein mention'd, they will not ſtand him in ten Shillings the Hundred, and perhaps not five Shillings, which will leſſen a great part of the Charge in the Management of his Hop-Ground.

This farther Advantage will ariſe from Plantations for Poles, that they will ſupply Wood for many other Uſes in Husbandry, and put us in the way of raiſing Timber-Trees, which are ſo much wanted in this Country.

HAV-

HAVING thus given all the *Inſtructions* which are neceſſary in the Culture of Hops, from the firſt preparing and planting the Ground to the bagging and fitting them for Sale, and for raiſing Poles, nothing more need be ſaid, but to obſerve that Gentlemen and Farmers have the greateſt Encouragement that can be deſir'd, to ſet about the planting of Hops, if we conſider the Goodneſs of our Soil, the Temperature of our Air, the cheap Labour of our People, the Eaſyneſs of getting Sets and raiſing Poles, and that the Skill requir'd in the Management of Hops may be ſoon learn'd from the *INSTRUCTIONS*, and above all, if we conſider the great Profit which the Hop-Planter may expect from his Plantations, by far greater than can be got in any other Part of Husbandry: Can there be greater Encouragement than to receive 60*l.* for the Hops of one *Iriſh* Acre in a Year? Yet this is no more than what may reaſonably be expected one Year with another, conſidering that there is always a great and conſtant Demand, and a greater Price paid for Hops in *Ireland* than in any other Part of the World. We have Inſtances of ſome among us, who have got 130*l.* for the Hops of one Acre in a Year, though but indifferently managed; which is as much as would purchaſe the Fee-Simple of 17 Acres, ſuppoſing the Land to be worth 10 Shillings *per* Acre yearly, and to be ſold at 20 Years Purchaſe.

Private Profit and Intereſt influence more than any other Conſideration; we ſhall find in the Buſineſs of Hops the greateſt Proſpect to expect and obtain it, becauſe every Article of the Management may be perform'd with leſs Expence in this, than in any other Country; and at the ſame Time the Pro-

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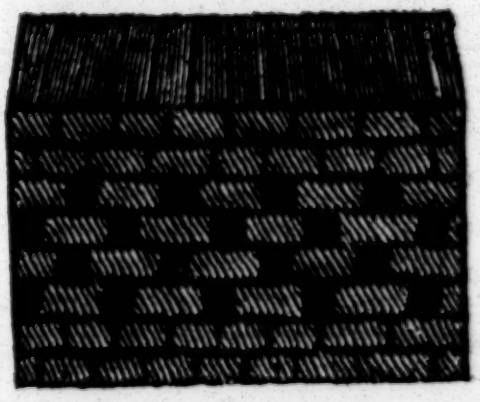
duce will yield a higher Rate and Profit here than any where elſe. I make no doubt but that in Time we ſhall ſee ſome among us make Thouſands a Year by this Part of Husbandry, as is done in *England*; but whatever may be the Profit in Proceſs of Time, when Plantations of Hops ſhall be greatly increaſed among us, (which yet will be more for the Benefit of the Kingdom) though the Gain to particular Hop-Planters may be leſſen'd thereby, yet it cannot be doubted but that the firſt Planters will be the great Gainers, ſince they will come to a Market which will not be over-ſtock'd in their own Time, and where Hops will not fail to ſell at a good Price.

Fig. 4.

The Back-Part.



The Side of the Steddle *or* Lanthorn.

The Furnace or Mouth of the Steddle.

FINIS.